



# Mites of the family Myobiidae (Acarina : Prostigmata) from mammals in the collection of the British Museum (Natural History)

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## Introduction

During 1972, 1973 and 1974, I had the opportunity to collect an interesting series of parasitic mites from various mammals in the collection of the British Museum (Natural History). Among this collection I found a number of new species belonging to several new genera of Myobiidae. The present paper provides detailed descriptions and figures of these species, preliminary diagnoses of all but one of which have been given in previous papers (Fain, 1972, 1973). In addition, three species found on bats preserved in the Institut royal des Sciences naturelles de Belgique, Bruxelles, and one species from a bat in the collection of the U.S. National Museum, Washington, are described.

Types have been deposited in the respective institutions where the mites were collected.

In the following descriptions the length of the body includes that of the gnathosoma but not of the palps.

## Descriptions of mites

### Family MYOBIIDAE Megnin, 1877

The family Myobiidae has been divided into two subfamilies on the basis of the structure of the clasp ing organs of legs I (Fain, 1973b, 1973c):

(1) Subfamily Archemyobiinae Fain, 1973 (see Fain, 1973b). The clasp ing apparatus consists of two processes situated on the internal surface of genu I forming a groove. The hair of the host is lodged in this groove and is grasped tightly when the two legs I are pressed together. The tarsus and the tibia I are well developed and normally articulated (Figs 4 & 5).

TYPE-GENUS. *Archemyobia* Jameson, 1955.

HOSTS. American marsupials.

(2) Subfamily Myobiinae Megnin, 1877. The clasp ing apparatus is formed of two striated processes situated on the external part of leg I, one on the genu, the other on the femur. The hair of the host is held between these two processes. There is no groove on the internal surface of leg I.

The Myobiinae are divided into two tribes:

(a) *Australomyobiini* Fain, 1973 (see Fain, 1973b). Legs I with tibia and tarsus articulated; tarsus well developed bearing two small but normally formed claws. Clasp ing processes of legs I sub-

equal and triangular, much longer than wide, and in the shape of strong retrorse hooks (Figs 6 & 7).

TYPE-GENUS. *Australomyobia* Fain, 1973 (see Fain, 1973b).

HOSTS. Australian marsupials.

(b) *Myobiini* Megnin, 1877. Tibia and tarsus I either completely or incompletely fused but not clearly articulated. Claws I absent, very poorly developed or vestigial. Clasping processes of legs I very unequal and not in the shape of strong retrorse hooks (Figs 12 & 13, 23–26).

TYPE-GENUS. *Myobia* von Heyden, 1826.

HOSTS. Insectivora, Chiroptera, Rodentia.

The Australomyobiini form a link between the more primitive Archemyobiinae and the most evolved Myobiinae.

It is interesting to note that the myobiids that live on Australian marsupials are more highly evolved than those parasitizing the American marsupials. This fact is an argument in favour of the assumption that the Australian marsupials arose from the most primitive forms of the American marsupials.

#### Subfamily ARCHEMYOBIINAE

Genus *ARCHEMYOBIA* Jameson, 1955

Subgenus *DROMICIMYOBIA* Fain, 1973

The subgenus *Dromicimyobia* is known only from nymphal stages. It is distinguished from the typical subgenus by the presence of only one claw on legs II–IV, instead of the two claws present in *Archemyobia*.

TYPE-SPECIES. *Archemyobia (Dromicimyobia) dromiciops* Fain, 1973.

#### *Archemyobia (Dromicimyobia) dromiciops* Fain, 1973

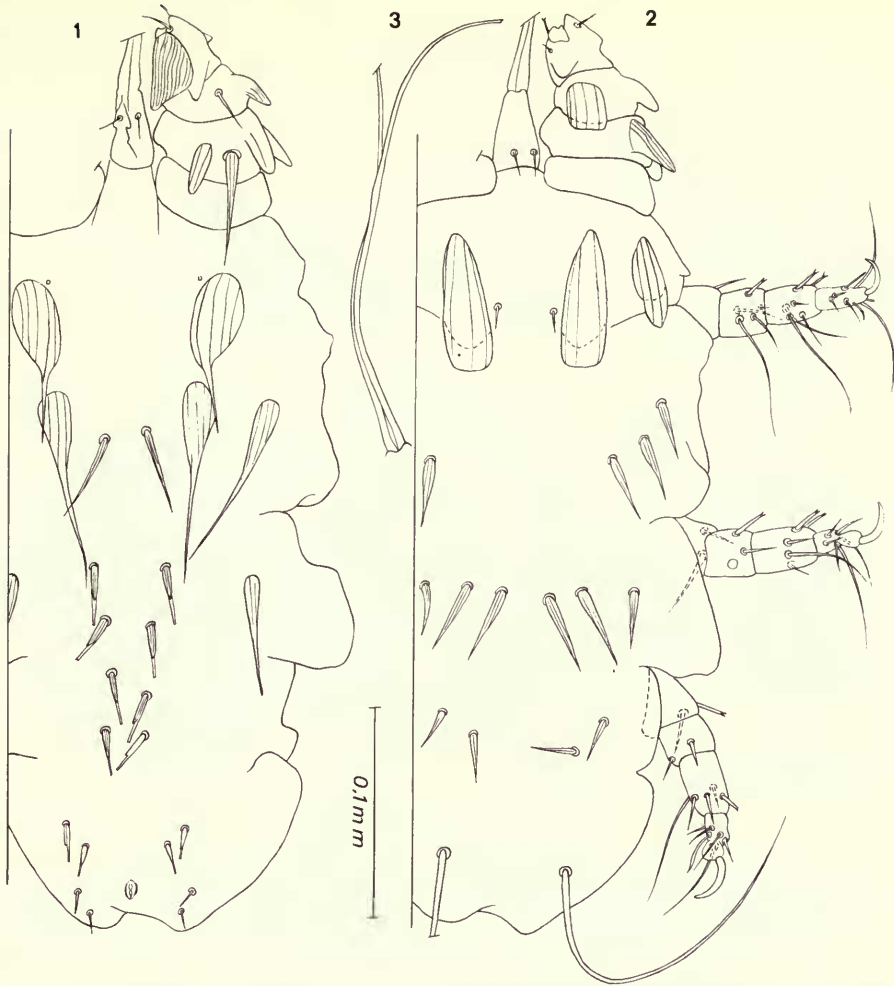
NYMPH (probably a tritonymph) (Figs 1–3). The holotype (Fain, 1973b) is 380  $\mu\text{m}$  long and 180  $\mu\text{m}$  wide. The *ve* setae are very wide and striated and they end in a very narrow prolongation. The *vi* are much narrower, striated and toothed and are situated a little behind the bases of the *sci*. The *sci*, *sce* and *li* resemble the *ve* but they are narrower and have a longer posterior prolongation. The *d1–d5* and *l2* are striated and toothed. The *l3* and *l4* are short and rodlike without visible tooth. *Venter*. Coxal I and II hairs very wide, truncate posteriorly and striate, the other coxals much narrower and not truncate. The *ic1* very thin and short, *ic2–ic4* slightly lanceolate and striate. Coxal hairs (I–IV): 2–2–2–1. Legs I as in subgenus *Archemyobia*. Legs II–IV each with one curved claw. Chaetotaxy of legs (II–IV): trochanters 1–2–2; genua-femora 4–2–2; tibiae 6–5–5; tarsi 7–6–6.

MATERIAL EXAMINED. Holotype and five paratypes, all nymphs, from ♀ *Dromiciops australis* (Marsupialia), BM no. 1924.2.5.1, Valdivia, Chile. Holotype (no. 1974.250) and one paratype (no. 1974.251) in BMNH.

#### Subfamily MYOBIINAE Tribe AUSTRALOMYOBIINI

Genus *AUSTRALOMYOBIA* Fain, 1973

DEFINITION. Legs I with the three apical segments well developed and articulated. Genu I bears a long external triangular process directed posteriorly and striated on its dorsal surface. Femur I bears apparently a similar process on the external part of its ventral surface, but as this process is hammer-shaped it could be in fact a modified hair that is attached by a narrow and rounded base. Legs I–IV with two claws. These claws are small and equal on legs I and unequal on legs II–IV.



**Figs 1-3** *Archemyobia (Dromicimyobia) dromiciops* Fain, holotype nymph. (1) dorsal view; (2) ventral view; (3) chelicerae.

Vulvar lobes very poorly developed. Genital hairs *g 7* long, relatively strong and curved. Gnathosoma well developed.

*Chaetotaxy*. All the hairs are toothless; *vi* thin and short; *ve*, *sci*, *sc e*, *d1-d 4*, *l1-l 3* thick and more or less distinctly striate; *d 5* and *l 4-l 5* thin. The *l 5* is similar to the *l 4* setae or smaller than the latter. The *ic 1-ic 4* are thin and bare. Coxal hairs (I-IV): 2-3-1-1, all these hairs are relatively long. Legs (I-IV): trochanters 3-3-3-3; femora 6 (or 7)-5-3-3; genua 7-7-7-7; tibiae 5-6-6-6; tarsi 8-7-6-6.

TYPE-SPECIES. *Australomyobia dasycercus* Fain, 1973.

HOSTS. Australian marsupials.

#### *Australomyobia dasycercus* Fain, 1973

*A. dasycercus* (see Fain, 1973b) is distinguished from *A. necopina* (Domrow, 1973) (= *Archemyobia necopina* Domrow, 1973) (Figs 10 & 11) by the following characters:

(1) Most of the dorsal hairs are much thicker and striated longitudinally. The *sci* are shorter but the *l 1* are longer. The *sci* are inflated in their basal half and 15  $\mu$ m thick (in *A. necopina*

these hairs are cylindro-conical and 4–5  $\mu\text{m}$  thick in their basal half). The *d 5* are more external. The *l 5* are as long as the *l 4*. The *d 1*, *d 2* and *l 3* have no ventral expansion. The *g 1* are more anterior. The anterior hairs of tibiae and genua III–IV are furcate.

(2) Claws II–IV much more unequal. The small claws are approximately 10, 8 and 8  $\mu\text{m}$  long respectively (in *A. necopina* the small claws are 13, 14 and 14  $\mu\text{m}$  long respectively).

(3) Legs I shorter (100  $\mu\text{m}$  from base of trochanter, to tip of tarsus) and thicker (maximum width of the femur: 48  $\mu\text{m}$ ). In *A. necopina* 113  $\mu\text{m} \times 36 \mu\text{m}$ .

FEMALE (holotype) (Figs 6–9). Length 480  $\mu\text{m}$ , maximum width 270  $\mu\text{m}$ . With the characters of the genus. In the holotype and only known specimen the *d 3*, *d 4* and *l 2* are broken at their bases.

MATERIAL EXAMINED. Holotype ♀ from *Dasycercus cristicauda* (Marsupialia), BM no. 97.1.3.2, Charlotta Waters, Central Australia. Holotype (no. 1974.257) in BMNH.

### Tribe MYOBIINI

#### Genus *MYSTACOBIA* Fain, 1972

DEFINITION. Only the female and a nymph are known (Fain, 1972a). Ventral surface of female with coxal shields becoming free laterally. Leg I with a free, small and rounded tarsus, inserted on tibia in dorso-terminal situation. Tibia I entirely striated ventrally such as in some myobiid genera from Insectivora. The femoral process of the clasping organ of leg I is very broad. Claws on legs I–IV: 0–2–2–2. The claws on legs II–IV are long and subequal. Vulva with 2 large lobes. The *g 7* setae are strong and curved. The *vi* and *ve* setae are thick and striated.

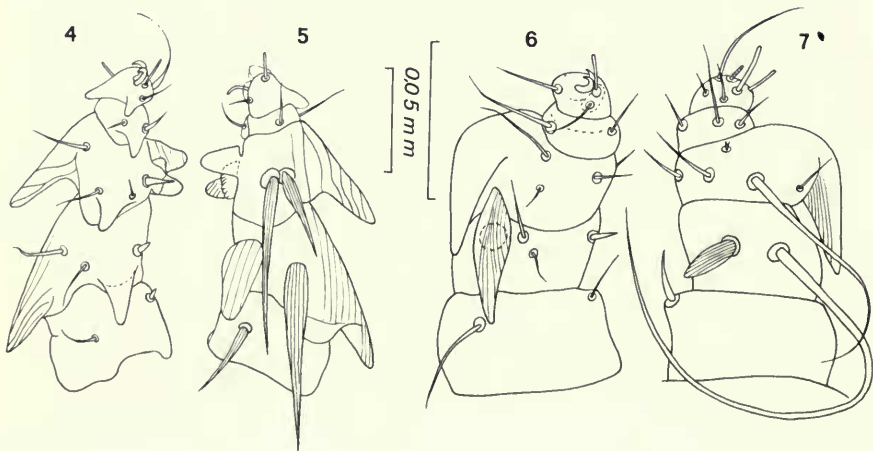
*Chaetotaxy*. Coxal hairs (I–IV) 2–3–0–0. Legs (II–IV): trochanters 3–3–3; femora 5–3–3; genua 7–6–6; tibiae 6–6–6; tarsi 7–6–6. There is one solenidion on tarsus II and one (very short) on genu II.

TYPE-SPECIES. *Mystacobia hirsuta* Fain, 1972.

#### *Mystacobia hirsuta* Fain, 1972

*M. hirsuta* (see Fain, 1972a) is known from the holotype female and a nymph.

FEMALE (holotype) (Figs 12–16). Length of the body 729  $\mu\text{m}$ ; maximum width 310  $\mu\text{m}$ . *Dorsum* transversely striated except the opisthosoma which is covered by a large punctate shield wider



Figs 4 & 5 *Archemyobia (Archemyobia) brasiliensis* Fain, female. (4) ventral view; (5) dorsal view.

Figs 6 & 7 *Australomyobia dasycercus* Fain, holotype female, leg I. (6) ventral view; (7) dorsal view.



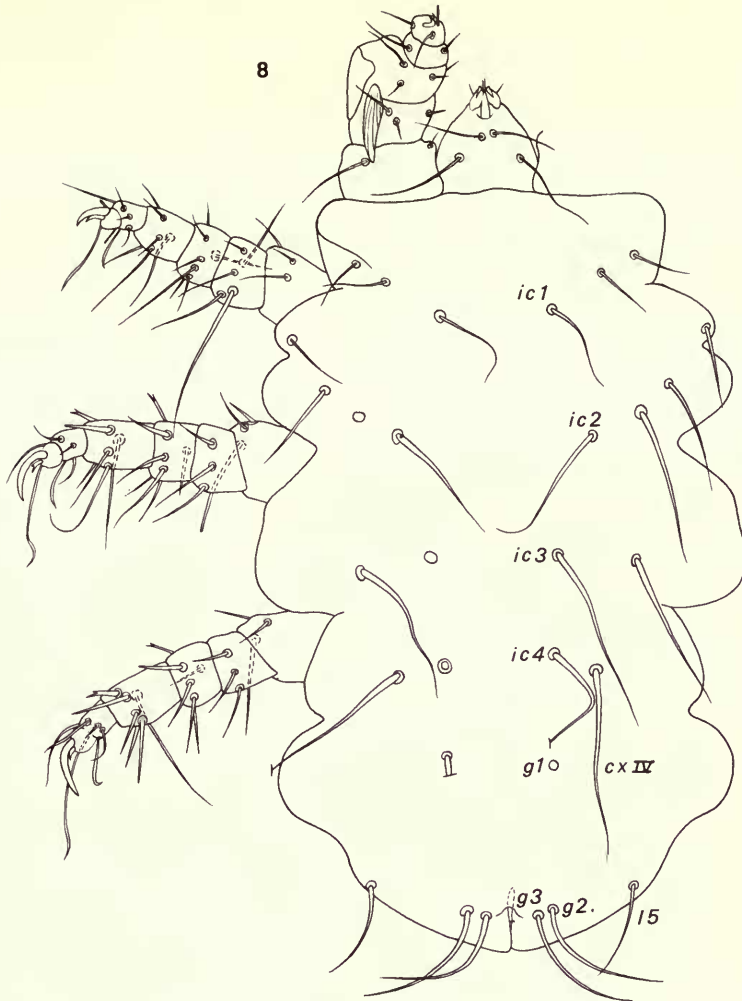


Fig. 8 *Australomyobia dasycercus* Fain, holotype female, ventral view.

than long. Vulva with well-developed lobes. The *vi*, *ve*, *sci*, *sc e*, *d 1*, *d 2* and *l 1* hairs wide and strong, with a double oblique striation, and not toothed. They are strongly attenuated posteriorly. The *vi* are much smaller than the *ve*. The *d 3*, *d 4*, *d 5*, *l 2*, *l 3* and *l 4* are thin and much shorter (maximum 45  $\mu\text{m}$  long). *Venter*. All the coxae are covered by sclerotized plates which become free laterally. The cuticle is striated in a short transverse band between coxae III and IV, in the lateral region of opisthosoma and in a narrow median band of the propodosoma. The *ic 1* hairs are short, the *ic 2* and *ic 3* are stronger and 120 and 250  $\mu\text{m}$  long respectively. The *ic 4* are thin and 130  $\mu\text{m}$  long. Gnathosoma wider than long. Palps very short. Legs I: Tarsus very small, situated in the dorso-apical region of the tibia. The latter is wider, long and completely striated on its ventral surface. This striation structure of the tibia is also encountered in some genera of Myobiidae living on Insectivora. The clasp ing organ is situated ventrally. It is formed by two striated processes, one being situated on the genu, directed forwards and inwards, the other, very large, is situated on the femur and is directed posteriorly.

**NYMPH.** Length 310  $\mu\text{m}$ , width 195  $\mu\text{m}$ . The *vi* hairs are absent. The *ve* are very wide and with a simple longitudinal striation. The *sci*, *sc e*, *l 1*, *d 1*, *d 2* are striated. The *d 1-d 4* and *l 1*, *l 2* are toothed. The *l 3* and *d 5* are lacking. The *ic 1* is narrow and short, the *ic 2*, *ic 3* and the inner

coxal II is in short oval and striated. The *ic* 4 is thin and long. The inner coxal I is rectangular, long and very wide and striate. Legs I symmetrical. Legs II with two claws; legs III–IV with one long curved claw.

MATERIAL EXAMINED. Holotype ♀ and paratype nymph from *Mystacina tuberculata* (Chiroptera), BM no. 62.2116–2117, Solomon Is., north of Long Is., Stewart Is., New Zealand, collected in 1932 (E. F. Stead). Holotype (no. 1974.256) in BMNH. [Note: In the original description (Fain, 1972a), the bat host was referred to as *Mystacops velutinus* and the type-locality was incorrectly stated to be Stewart Is., Solomon Is.]

### Genus *PTEROPIMYOBIA* Fain, 1973

DEFINITION. Tibia and tarsus I fused (Fain, 1973b), forming a voluminous complex bearing several small chitinous triangular tooth-like processes directed posteriorly. Genu I very large. The clasping organ of leg I is formed of two rather small striated processes, the process of the genu being bifid. Legs I–IV with 0–2–2–2 claws, these claws are well-developed, subequal and only

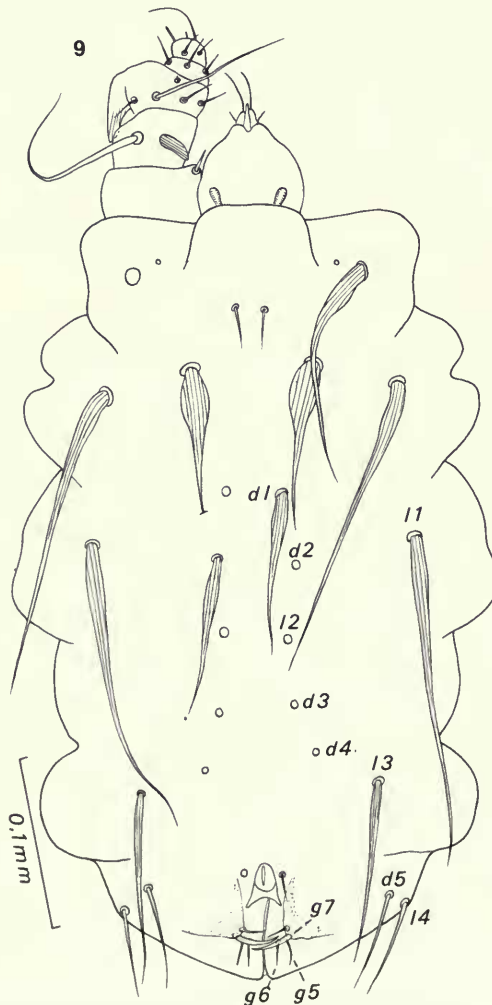
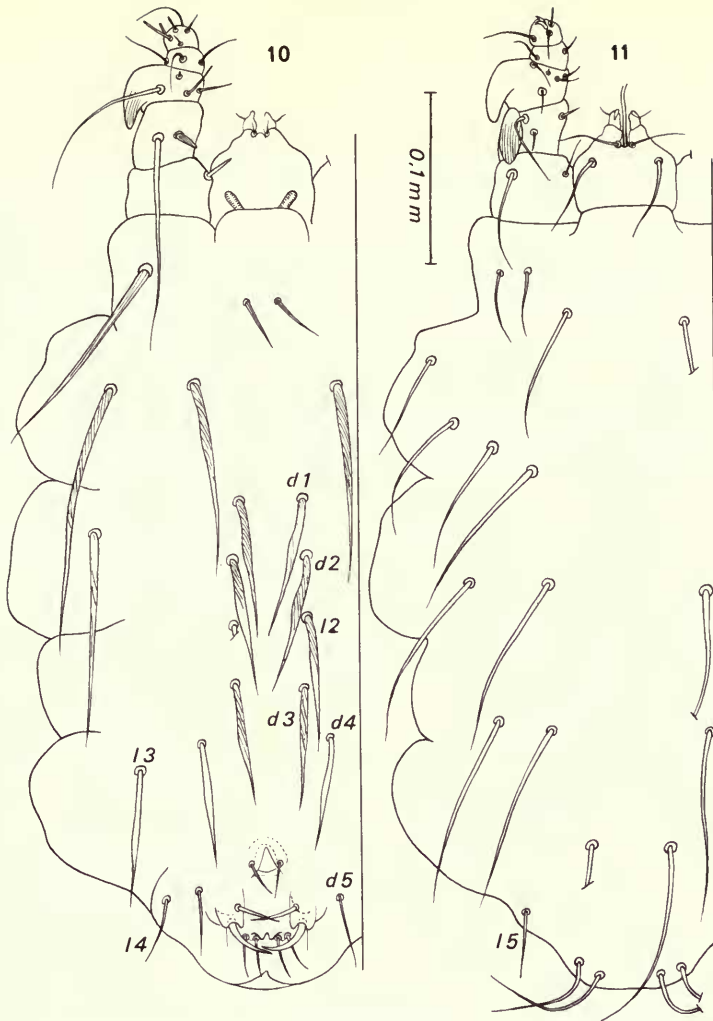
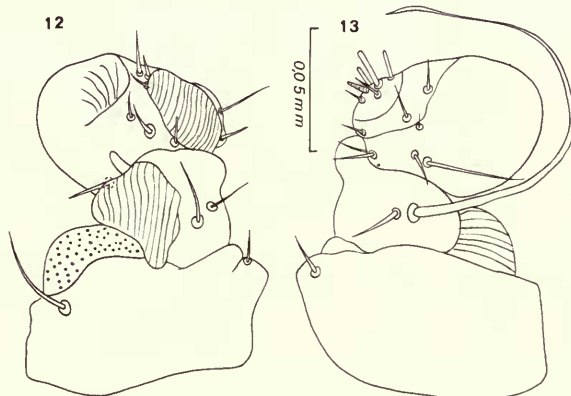


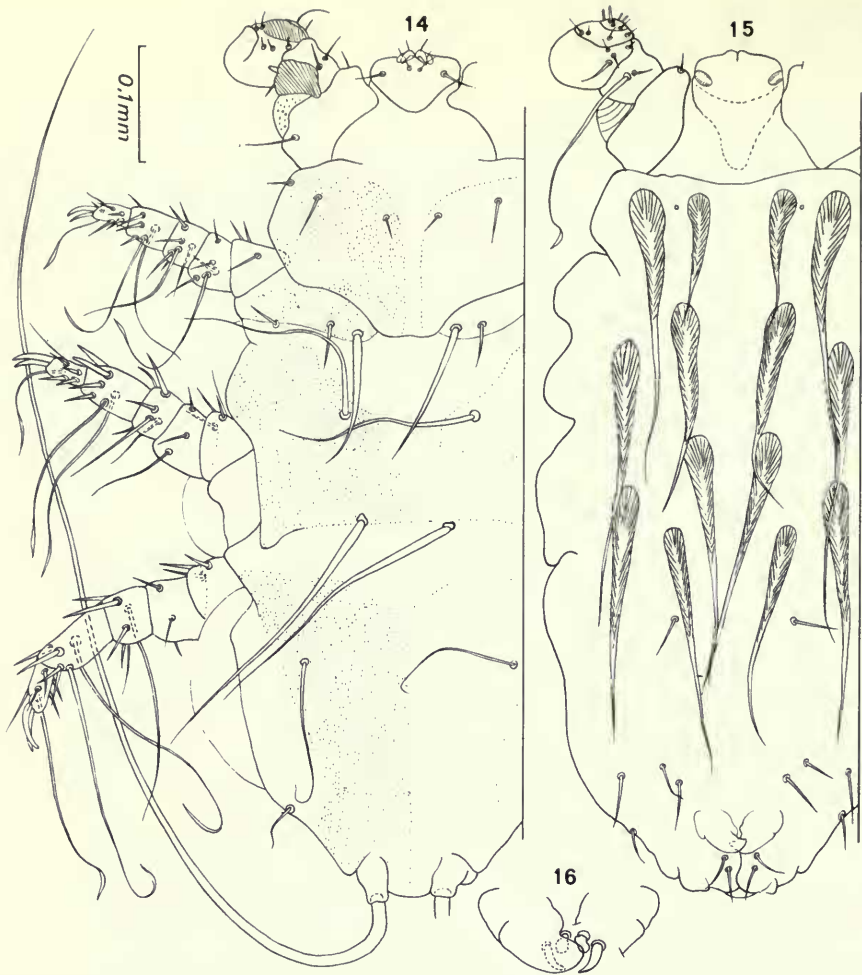
Fig. 9 *Australomyobia dasyercus* Fain, holotype female, dorsal view.



Figs 10 & 11 *Australomyobia necopina* (Domrow), female. (10) dorsal view; (11) ventral view.



Figs 12 & 13 *Mystacobia hirsuta* Fain, holotype female, leg 1. (12) ventral view; (13) dorsal view.



Figs 14–16 *Mystacobia hirsuta* Fain, holotype female. (14) ventral view; (15) dorsal view; (16) vulvo-anal region.

slightly curved. The *vi* setae are very small. The *ic 1* and the internal *cx I* setae are broad and striated, shell-shaped. Vulvar lobes present, variably developed.

*Chaetotaxy.* *d 1-d 5* and *11-15* present; coxae (I–IV) 2–3–0–1. Legs (II–IV): trochanters 3–3–3; femora 5–3–3; genua 7–6–6; tibiae 6–6–6; tarsi 7–6–6. There is one solenidion on tarsus II and one very small bifid solenidion on genu II.

TYPE-SPECIES. *Pteropimyobia nyctimene* Fain, 1973.

#### *Pteropimyobia nyctimene* Fain, 1973

The original specific name *nyctimene* was misspelt (Fain, 1973b) since the generic name of the host was *Nyctimene* and not *Nyctineme*. I have therefore emended the name of this species to *Pteropimyobia nyctimene* (see Fain, 1974).

FEMALE (Figs 17–19). The holotype is 546  $\mu\text{m}$  long and 220  $\mu\text{m}$  wide. Dorsal hairs broad and with longitudinal striations except the genitals and the *l 4* which are narrow and bare. All these hairs are toothless. Vulvar lobes rounded, rather well developed but presenting many folds caused probably by maceration. *Venter.* The *ic 1* and the 2 coxal II setae are flat, wide and striated;



*ic 2-ic 4* are strong and striated. Gnathosoma trapezoidal, very small, and bearing ventrally a pair of shell-shaped hairs resembling the *ic 1* hairs; palps inserted ventrally. Legs I voluminous, the tibio-tarsus bears 3 teeth, of which 2 are situated in the apical half of the ventral surface and one on the dorsal surface near the apex.

MALE (allotype). Length 408  $\mu\text{m}$ , width 174  $\mu\text{m}$ . Genital orifice situated at the level of the *sc e*, the genital area with 2 pairs of very small hairs. Penis sinuous, 180  $\mu\text{m}$  long. Setae *vi* and *ve* as in the female. The *sc i* are very small; *d 1*, *d 2* and *l 1* thick and striated. Ventral hairs and legs as in the female.

MATERIAL EXAMINED. Holotype ♀, 2 paratype ♀♀ and allotype ♂ from *Nyctimene bougainvillei* (Chiroptera), no. 6343 in Institut royal des Sciences naturelles de Belgique, Buin, Bougainville Is., Solomon Is., collected 1947. Types in the Institut royal des Sciences naturelles de Belgique, Bruxelles.

*Pteropimyobia pahangensis* Fain, 1973

*P. pahangensis* (see Fain, 1973b) is distinguished from *P. nyctimene* Fain by the following characters:

(1) Tibio-tarsus I with 5 triangular teeth, of which 4 are ventral and situated on a longitudinal row and one is apical dorsal.



Figs 17-19 *Pteropimyobia nyctimene* Fain, holotype female. 17 ventral view; (18) dorsal view; (19) vulvo-anal view.



Figs 20–22 *Pteropimyobia pahangensis* Fain, holotype female. (20) ventral view; (21) dorsal view; (22) vulvo-anal region.

(2) The *sc i* and *sc e* hairs are shorter and much wider and bear a double and oblique striation. The two internal pairs of *cx II* hairs are wide and striate.

(3) Presence of a copulatory orifice situated medially, between *ic 4* and *cx IV*.

**FEMALE** (Figs 20–24). The holotype is 525  $\mu\text{m}$  long and 190  $\mu\text{m}$  wide. The *sc i*, *sc e*, *d 1–d 4*, *l 1–l 3* are wide and with a double oblique striation. Vulvar lobes well developed. Ventral hairs as in *P. nyctimene* but distinctly wider.

**MALE.** Unknown.

**MATERIAL EXAMINED.** Holotype ♀ and 2 paratype ♀♀ from the neck of *Macroglossus minimus sobrinus* (Chiroptera), BM no. 67.1490, Gunong Benom, Pahang, Malaya, collected 18.iii.1967. Holotype (no. 1974.259) in BMNH.

### Genus *PHYLLOSTOMYOBIA* Fain, 1973

**DEFINITION.** Only the female is known (see Fain, 1973b). Legs I with the tibia and tarsus fused forming a small complex devoid of apical claws. Genu I large, strongly oblique with a ventral clasping process recurved ventrally and inwards. Trochanter I very broad, with the anterior

extremity strongly expanded. Legs II–IV narrow, ending in two subequal or unequal and slightly curved claws. Vulvar lobes conical, well developed. Gnathosoma normally developed, with a pair of ventral flat and retrorse processes.

*Chaetotaxy.* *vi* and *sci* very thin and short, the *sci* may be absent. The *d1*, *d2* and *l1* are strong, all these hairs are toothed. Other dorsal hairs variable. The *l4* is lacking. Ventral hairs, except *l5*, very thin and short (maximum 20  $\mu\text{m}$  long). Coxal hairs (I–IV): 2–3–0–1. Legs (II–IV): trochanters 3–2–2; femora 5–2–2; genua 5–4–4; tibiae 6–6–6; tarsi 6–6–6. Tarsus II with a short cylindrical dorso-apical solenidion; there is also a very short and bifurcate solenidion on genu II.

TRITONYMPH. Legs I very unequal in shape. Legs II–IV with 2–1–1 claws.

TYPE-SPECIES. *Phyllostomyobia mimon* Fain, 1973.

## Key to species of *PHYLLOSTOMYOBIA*

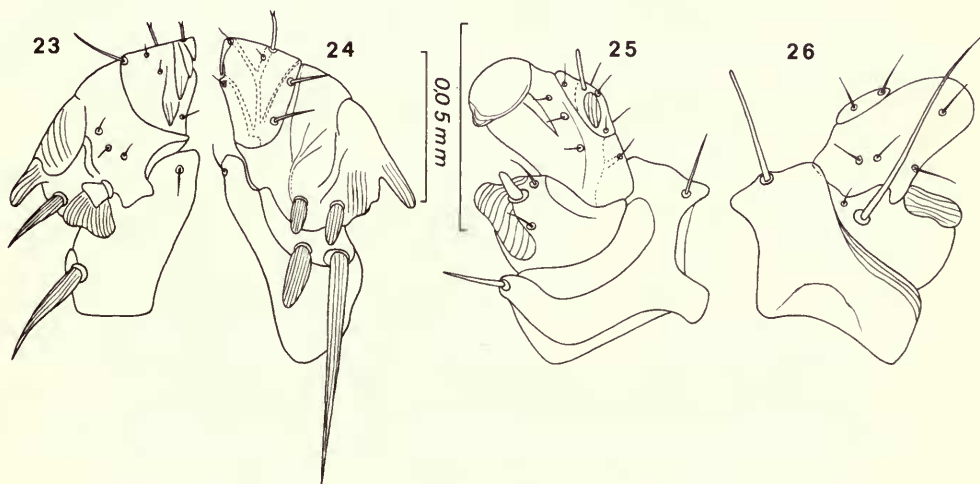
### Females

- 1 Claws of leg III–IV unequal and larger: long claw 25  $\mu\text{m}$ , short claw 19  $\mu\text{m}$  long. The *sci* are lacking; the *l2* are shorter and much thinner than the *d1* and *d2*; the *ve* and *sce* are inflated basally and abruptly narrowed behind the tooth; *ic4* and *cx IV* are subequal and very short . . . . . *P. leptonycteris* Fain, 1973
- Claws of legs III–IV equal or subequal and shorter (length 10–12  $\mu\text{m}$ ). The *sci* are present, *l2* not shorter or thinner than *d1* and *d2*; *ve* and *sce* not inflated basally and not abruptly narrowed behind the tooth . . . . . 2
- 2 The *d3* and *d4* are thicker, longer (20–25  $\mu\text{m}$ ) and rod-like; *l2* situated at 30  $\mu\text{m}$  behind the *d2*; *sce* and *l1* shorter (63–65  $\mu\text{m}$ ); *ve* longer (42  $\mu\text{m}$ ); *d1*, *d2* and *l2* slightly inflated basally; *sci* situated at 12–15  $\mu\text{m}$  from the *sce* . . . . . *P. chrotopterus* Fain, 1973
- The *d3* and *d4* are very short (8–9  $\mu\text{m}$ ) and very thin; *l2* situated at 50–57  $\mu\text{m}$  from the *d2*; *sce* and *l1* longer (80–90  $\mu\text{m}$ ); *ve* slightly shorter (33–36  $\mu\text{m}$ ); *d1*, *d2* and *l2* not distinctly inflated basally; *sci* situated at 27–30  $\mu\text{m}$  behind the *sce* . . . . . *P. mimon* Fain, 1973

### *Phyllostomyobia mimon* Fain, 1973

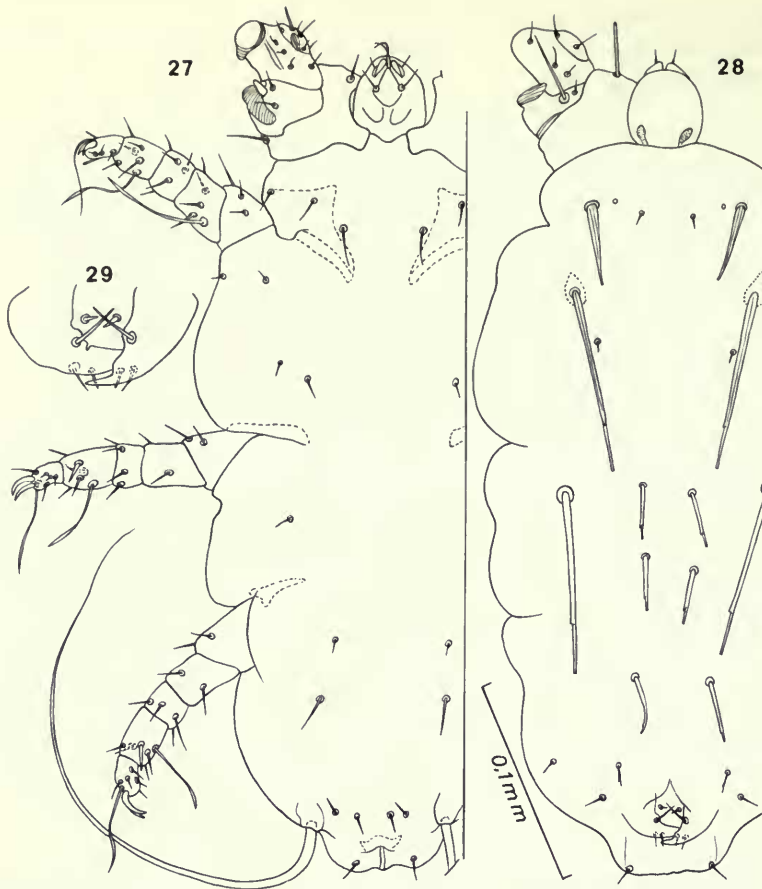
Only the female is known (Fain, 1973b).

FEMALE (Figs 25–29). The holotype is 375  $\mu\text{m}$  long and 171  $\mu\text{m}$  wide. With the characters given above in the description of the genus and the key.



Figs 23 & 24 *Pteropimyobia pahangensis* Fain, female, leg I. (23) ventral view; (24) dorsal view.

Figs 25 & 26 *Phyllostomyobia mimon* Fain, holotype female, leg I. (25) ventral view; (26) dorsal view.



Figs 27–29 *Phyllostomyobia mimon* Fain, holotype female. (27) ventral view; (28) dorsal view; (29) vulvo-anal region.

**MATERIAL EXAMINED.** Holotype ♀ and paratype ♀ from *Mimon bennetti* (Chiroptera), BM no. 65.618, forest reserve 24 miles along Potaro road from Bartica, Guyana. Holotype (no. 1974.260) in BMNH.

***Phyllostomyobia chropterus* Fain, 1973**

*P. chropterus* (see Fain, 1973b) is known from three tritonymphs, two of which contain a completely developed female.

**FEMALE** (in the tritonymph) (Figs 30 & 31). Length of the holotype female 320  $\mu\text{m}$ , width 180  $\mu\text{m}$ . With characters given above.

**TRITONYMPH** (containing a female). The posterior region of the dorsum bears 3 pairs of cylindrical and toothed hairs, 12–21  $\mu\text{m}$  long. The two pairs of coxal I hairs are shell-shaped (nearly as wide as long and striate).

**MATERIAL EXAMINED.** Holotype ♀ (in tritonymphal skin), paratype ♀ (in tritonymphal skin) and paratype tritonymph from *Chropterus* sp. (Chiroptera), BM no. 13.7.8.10–11, Joinville, Sta Catharina, Brazil. Holotype and paratype tritonymph (no. 1974.258) in BMNH.

***Phyllostomyobia leptonycteris* Fain, 1973**

*P. leptonycteris* (see Fain, 1973b) is known after the holotype female and several nymphs and larvae.



FEMALE (holotype) (Figs 32–34). Length 380  $\mu\text{m}$  long and 228  $\mu\text{m}$  wide. With the characters of the genus. The *sc i* hairs are lacking. The *ve*, *sc e*, *l 1*, *d 1*, *d 2* are thick near their base and finely attenuated apically; the *l 2* hairs very thin and shorter than the *d 1* and *d 2*. The *d 3*, *d 4* and *l 3* are thin and short. Claws of legs II–IV unequal and longer than in the other species of the genus. Genital lobes well developed.

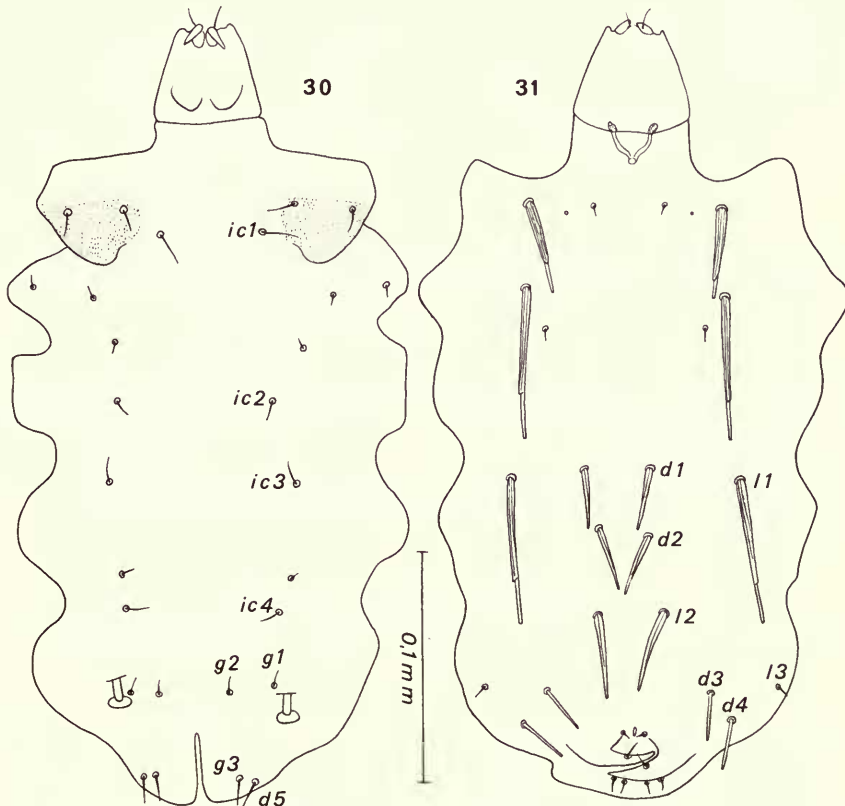
MATERIAL EXAMINED. Holotype ♀ and 2 paratype nymphs from facial hairs of *Leptoncyteris nivalis* (Chiroptera), BM no. 40.813–815, Mt Emory, Texas, U.S.A. Holotype (no. 1974.261) in BMNH.

Genus *PTERACARUS* Jameson & Chow, 1952

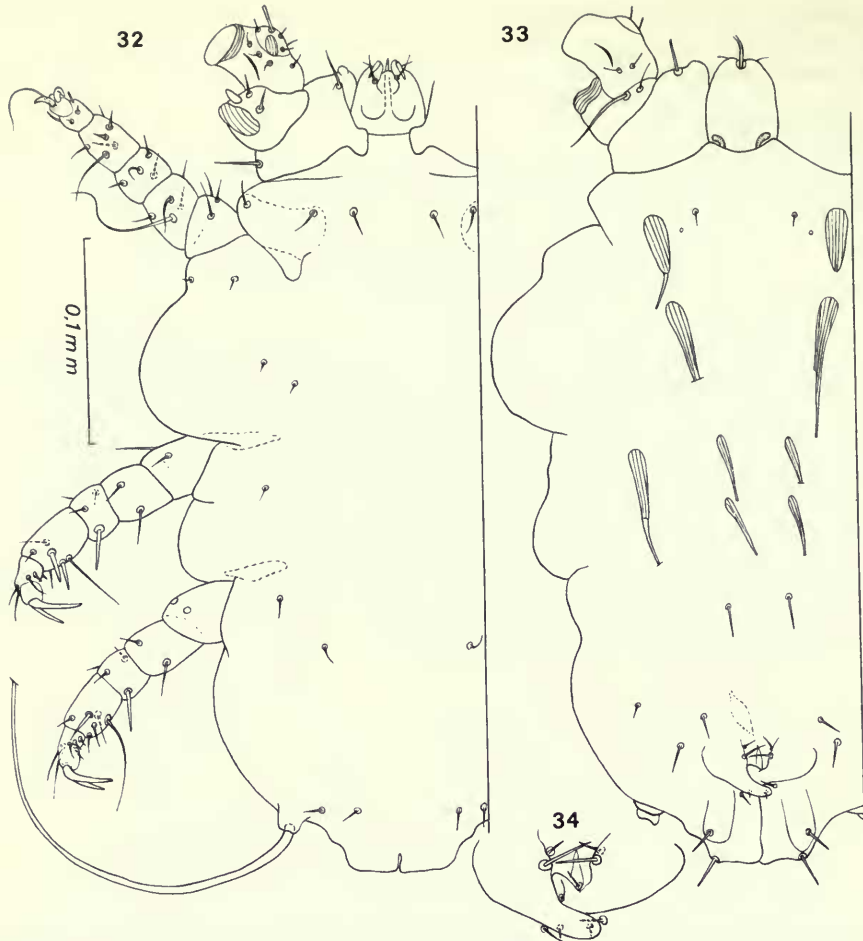
*Pteracarus shealsi* Fain, 1973

Dusbabek (1973) has revised the genus *Pteracarus*. *P. shealsi* (see Fain, 1973d) belongs to the group with 6 hairs on genu IV and 5 pairs of *d* hairs on the hysterosoma, the *d 1*–*d 3* being very small. It is distinguished from all other species of this group by the presence of only 2 hairs on trochanters II and by the length of the *ic 1* hairs which are distinctly longer than the *cx 1* hairs.

FEMALE (holotype and only specimen known) (Figs 35 & 36). Length 363  $\mu\text{m}$ , maximum width 215  $\mu\text{m}$ . *Dorsum*. The *ve*, *sc e* and *l 1* hairs are 99  $\mu\text{m}$ , 170  $\mu\text{m}$  and 150  $\mu\text{m}$  long respectively. The *vi* and *sc i* are 12  $\mu\text{m}$  long. The *l 3* and *l 4* are subequal and 23–24  $\mu\text{m}$  long. *Venter*. The *ic 1* are much longer (30–35  $\mu\text{m}$ ) than the coxals I (12–18  $\mu\text{m}$ ). The external coxal II is only moderately inflated. The *g 1* are longer (24  $\mu\text{m}$ ) and stronger than the *ic 4* (16  $\mu\text{m}$ ). Gnathosoma 40  $\mu\text{m}$  long and 46  $\mu\text{m}$  wide with lateral margins nearly parallel.



Figs 30 & 31 *Phyllostomyobia chropterus* Fain, holotype female. (30) ventral view; (31) dorsal view.



**Figs 32–34** *Phyllostomyobia leptonycteris* Fain, holotype female. (32) ventral view; (33) dorsal view; (34) vulvo-anal region.

*Chaetotaxy of the legs* (II–IV). Trochanters 2–3–3; femora 5–3–3; genua 7–6–6; tibiae; tarsi 6–6–6. Tibiae III–IV bear ventrally a short and strong striated spine. The anterior setae of trochanters II–III are distinctly barbed.

**MATERIAL EXAMINED.** Holotype ♀ from the posterolateral region of the dorsum of *Dasypterus ega* (Chiroptera), BM no. 34.7.3.1, Trinidad. Holotype (no. 1974.254) in BMNH.

#### *Pteracarus macfarlanei* Fain, 1973

*P. macfarlanei* (see Fain, 1973d) belongs to the same group as *P. shealsi* but the *d 1*, *d 2* and *d 3* setae are represented only by their bases. Genu IV bears 6 setae, the strong dorsal seta being present.

**FEMALE** (Figs 37 and 38). The holotype is 312  $\mu\text{m}$  long and 195  $\mu\text{m}$  wide. *Dorsum*. The *ve*, *sc e* and *l 1* hairs are 63  $\mu\text{m}$ , 108  $\mu\text{m}$  and 96  $\mu\text{m}$  respectively. The *vi*, *sc i*, *l 3* and *l 4* are 7.5  $\mu\text{m}$ , 3  $\mu\text{m}$ , 12  $\mu\text{m}$  and 14  $\mu\text{m}$  long respectively. The *d 4* and *d 5* are very thin and very short (4–6  $\mu\text{m}$ ). *Venter*. All the ventral setae are short or very short. The *ic 4* and *cx IV* are 9  $\mu\text{m}$  and 8  $\mu\text{m}$  long respectively, the *g 1* measure 12  $\mu\text{m}$ . Gnathosoma distinctly wider (46  $\mu\text{m}$ ) than long (36  $\mu\text{m}$ ), with lateral margins rounded.

*Chaetotaxy of the legs* (II–IV). Trochanters 3–3–3. Other segments as in *P. shealsi*. The anterior setae of trochanters II–IV are not barbed. The ventral spine of tibiae III–IV is distinctly narrower than in *P. shealsi*.

**MALE** (Fig. 39). The allotype is 237  $\mu\text{m}$  long and 156  $\mu\text{m}$  wide. *Dorsum*. The lengths of the *ve*, *sc e* and *l 1* are 51  $\mu\text{m}$ , 93  $\mu\text{m}$  and 80  $\mu\text{m}$  respectively. The *sc i* are situated at the same level as the *sc e*. The *d* setae are completely absent. The *l 4* is 5  $\mu\text{m}$  long. Genital orifice situated on a punctate plate which bears 2 posterior pairs of unequal rodlike setae (11  $\mu\text{m}$  and 7.5  $\mu\text{m}$ ) and 6 (or ? 7) pairs of very small, indistinct setae. Penis 145  $\mu\text{m}$  long, slightly curved and very finely attenuated apically. *Venter*. All the setae very short and fine, maximum length 15–16  $\mu\text{m}$ . Other characters as in the female.

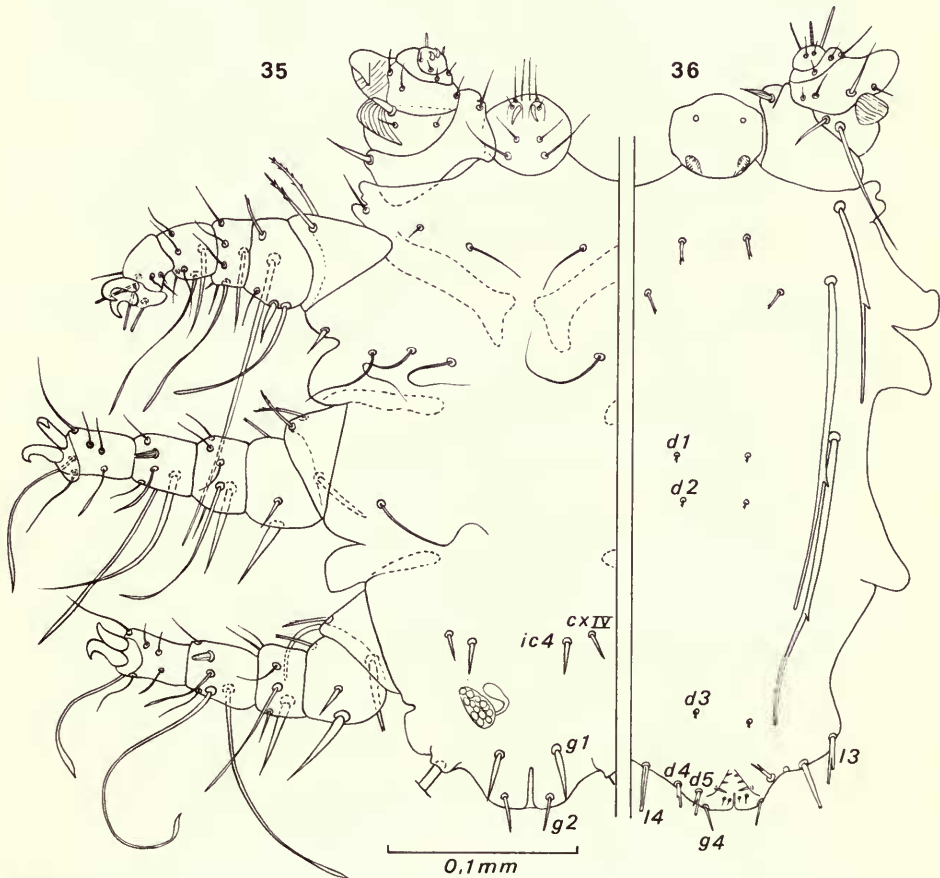
**MATERIAL EXAMINED**. Holotype ♀, allotype ♂, paratype ♀ and paratype ♂ from posterior part of the dorsum of *Murina huttoni* (Chiroptera), BM no. 67.1606, Gunong Benom, Pahang, Malaya, collected 17.iii.1907. Holotype (no. 1974.252) and allotype (no. 1974.253) in BMNH.

*Pteracarus peruvianus* sp. nov.

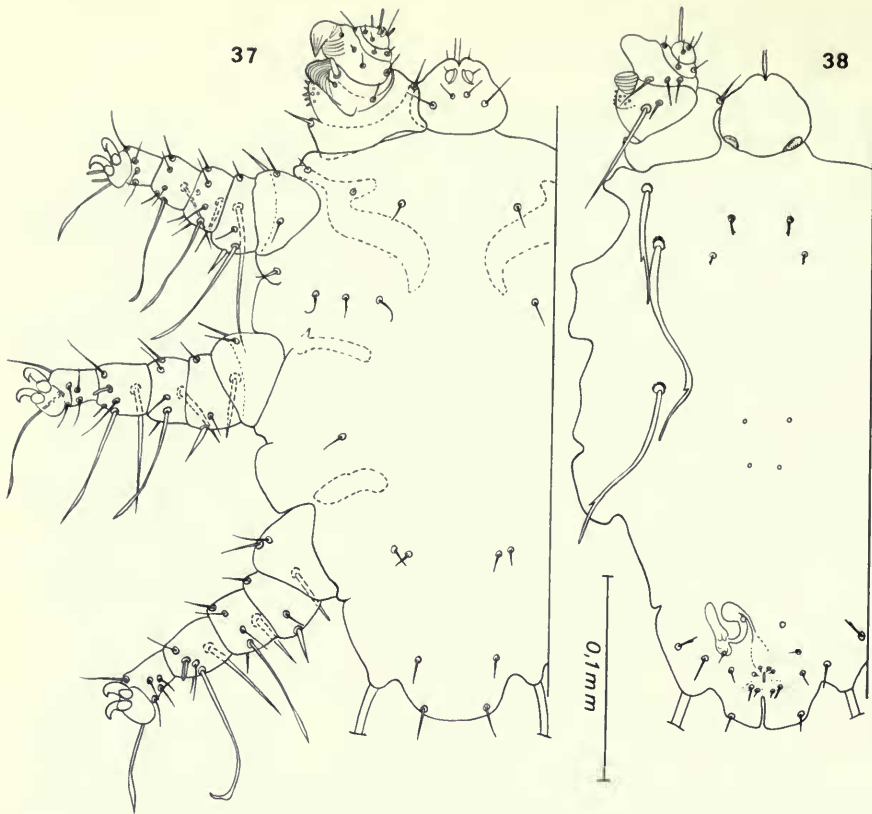
This new species is known from only one female specimen. It belongs to the group characterized by the presence of only 5 setae on genu IV (the dorsal being absent) and the absence of *d 1*, *d 2* and *d 3* setae.

It is distinguished from the other four species of that group by the combination of the following characters:

- (1) The two pairs of ventral gnathosomal hairs are arranged in a transverse row.



Figs 35 & 36 *Pteracarus shealsi* Fain, holotype female. (35) ventral view; (36) dorsal view.



Figs 37 & 38 *Pteracarus macfarlanei* Fain, holotype female. (37) ventral view; (38) dorsal view.

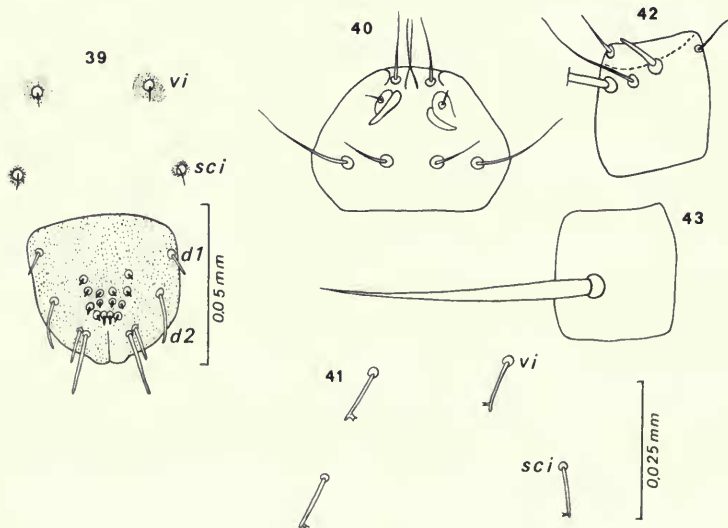


Fig. 39 *Pteracarus macfarlanei* Fain, allotype male, genital region with *vi* and *sci* hairs.

Figs 40-43 *Pteracarus peruvianus* sp. n., holotype female. (40) gnathosoma, ventral view; (41) *vi* and *sci* hairs; (42) tibia IV, ventral view; (43) tibia IV, dorsal view.





**Figs 44 & 45** *Acanthopthirus (Myotimyobia) dasypterus* Fain, holotype female. (44) dorsal view; (45) ventral view.

- (2) The ventral spine of tibia IV is narrow.
- (3) The strong dorsal hair of tibia IV is long, and regularly cylindro-conical without a basal dilation.
- (4) The epimera II-IV are strongly sclerotized.
- (5) The *vi* and *sci* setae have a small bifid preapical tooth.

FEMALE (holotype) (Figs 40-43). Length 294  $\mu\text{m}$ , width 215  $\mu\text{m}$ . Length of *ve*, *sci* and *sc e* setae: 70  $\mu\text{m}$ , 120  $\mu\text{m}$  and 120  $\mu\text{m}$ . The *vi* and *sci* are 11-12  $\mu\text{m}$  long. The *l3* are stronger and longer (26  $\mu\text{m}$ ) than the *l4* (length 20  $\mu\text{m}$ ). The *d4* and *d5* are very short (7.5 and 10  $\mu\text{m}$  respectively). The *ic4* and *g1* are equal and they are slightly longer (14  $\mu\text{m}$ ) than the *cx IV* (11  $\mu\text{m}$ ). Gnathosoma wider (42  $\mu\text{m}$ ) than long (30  $\mu\text{m}$ ).

MATERIAL EXAMINED. Holotype ♀ from *Thyroptera discifera* (Chiroptera), BM no. 28.5.2.264, Cumeria, Loreto, High Ucayali, Peru. Holotype (no. 1974.255) in BMNH.

Genus *ACANTHOPHTHIUS* Perkins, 1925

Subgenus *MYOTIMYOBIA* Fain, 1972

*Acanthopthirus (Myotimyobia) dasypterus* Fain, 1973

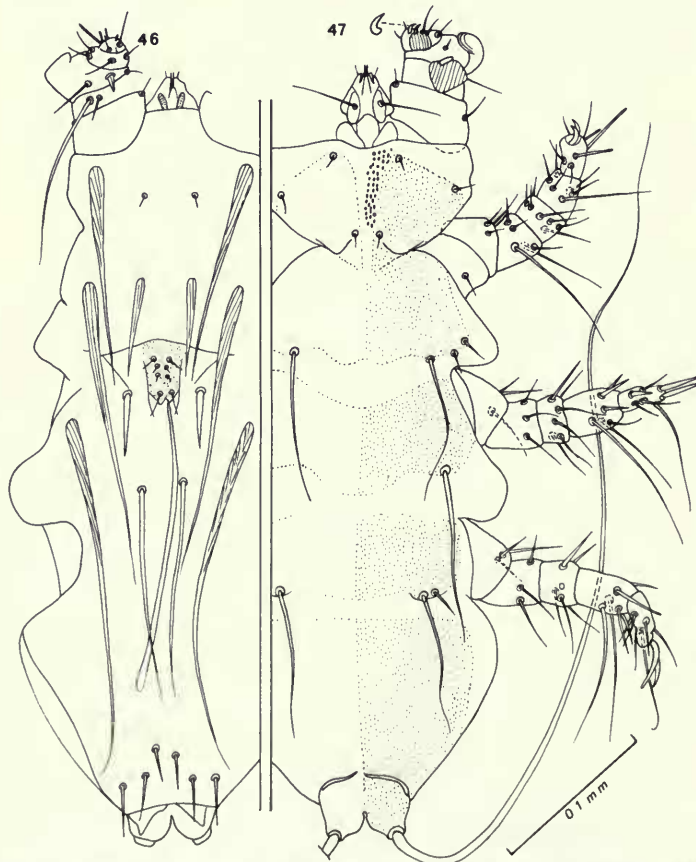
*A. dasypterus* (see Fain, 1973b) is well characterized in both sexes by the presence of large punctate areas on the ventral surface of the body, and by the shape of the chaetotaxy.

**FEMALE** (Figs 44 & 45). The holotype is 525  $\mu\text{m}$  long and 204  $\mu\text{m}$  wide. *Dorsum*. Anovulvar lobes triangular, well developed. There is a rounded punctate area in front of the anovulvar region. *Venter*. All the coxae bear large punctate shields, those of coxae III and IV are fused in the mid-line. Opisthosoma bearing a broad punctate median shield fused anteriorly with the shields of coxae IV. Gnathosoma small, longer ventrally than dorsally, distinctly widened posteriorly. Legs I: trochanters slightly produced anteriorly; tibiae with a large striated scale (modified hair) on its ventral side; the genu with a rather small striated external clasping process. Tarsi II-IV with two well-developed subequal claws.

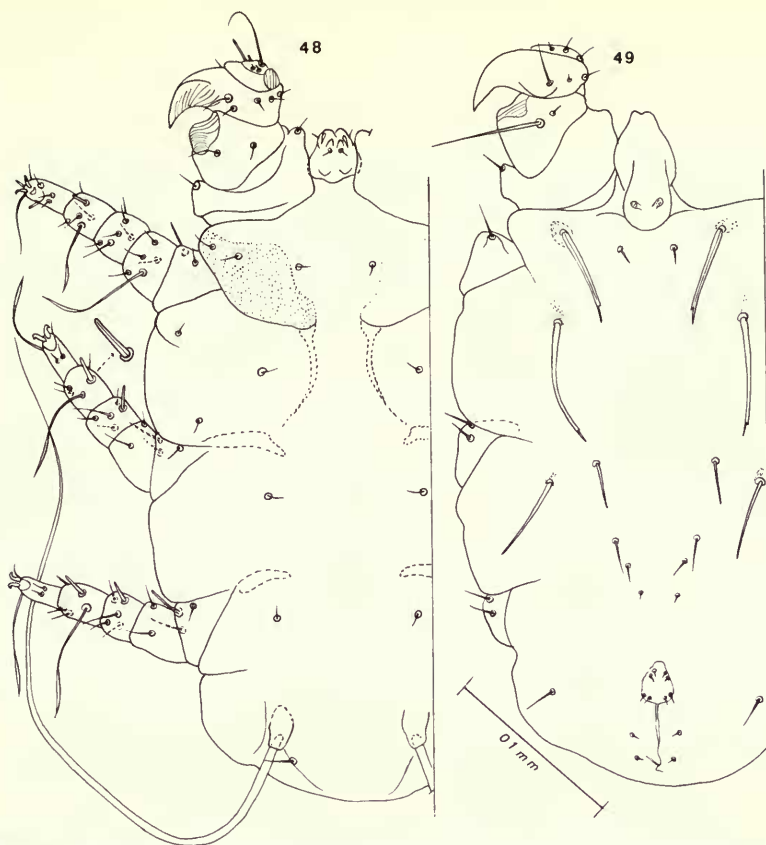
*Chaetotaxy of the body*. All the dorsal setae are striated and without a tooth, the external setae (*ve*, *sc e*, *l 1*) being longer than the internal ones. The *l 4* are present. The *ic 1* are small, the *ic 2*, *ic 3* and *ic 4* are thin and long. The *ic 4* is 26  $\mu\text{m}$  long. Coxal setae: 3-3-0-1. The *g 1* and *g 2* are relatively long and situated in front of the *l 5* setae. *Chaetotaxy of legs II-IV*. Trochanters 3-3-3; femora 5-3-3; genua, tibiae and tarsi 7-6-6.

**MALE** (Figs 46 & 47). Allotype 450  $\mu\text{m}$  long and 180  $\mu\text{m}$  wide. Genital orifice at 15  $\mu\text{m}$  in front of the *l 1* setae. The genital plate bears 4 pairs of small setae. Penis rather thick, nearly straight and 165  $\mu\text{m}$  long. The *vi* are very small. The *ve*, *sc e* and *l 1* are only slightly inflated near their bases and they are 125  $\mu\text{m}$ , 160  $\mu\text{m}$  and 210  $\mu\text{m}$  long. Legs as in the female but the claws II are shorter and stronger.

**MATERIAL EXAMINED**. Holotype ♀ and allotype ♂ from the dorsal surface of the body of *Dasypterus ega* (Chiroptera), BM no. 34.7.3.1, Trinidad. Holotype (no. 1976.12.20.1) and allotype (no. 1976.12.20.2) in BMNH.



**Figs 46 & 47** *Acanthopthirus (Myotimyobia) dasypterus* Fain, allotype male. (46) dorsal view; (47) ventral view.



Figs 48 & 49 *Hipposiderobia phyllorhinae* Fain, holotype female. (48) ventral view; (49) dorsal view.

Genus *HIPPOSIDEROBIA* Dusbabek, 1968

*Hipposiderobia phyllorhinae* Fain, 1972

*H. phyllorhinae* (see Fain, 1972c) is distinguished from the other species of the genus (except *H. ceylonica* Radford) by its great size. From the latter species it may be separated by the small size of the *l* 2 and *d* 3 (which are strong in *ceylonica*) and by the different position of these setae on the body.

**FEMALE** (Figs 48 & 49). The holotype is 366  $\mu\text{m}$  long and 216  $\mu\text{m}$  wide. *Dorsum*. Genital lobes lacking. Gnathosoma very short ventrally. Legs I: the tibiae bear ventrally a small striated scale (=modified hair). This scale is absent in the female of the other species of the genus. Legs short.

*Chaetotaxy of the body*. *v e*, *s c e* and *l* 1 are 56  $\mu\text{m}$ , 64  $\mu\text{m}$  and 48  $\mu\text{m}$  long respectively; the *d* 1 and *d* 2 thicker and longer than *l* 1 and *l* 2. The *l* 3 are 18  $\mu\text{m}$  long. Genital hairs *g* 3–*g* 7 very small. Coxae with 2–2–0–0 setae. The *ic* 1–*ic* 4 are very small.

*Chaetotaxy of the legs II–IV*. Trochanters 3–3–3; femora 5–2–2; genua and tibiae 6–5–5; tarsi 6–4–4. The antero-ventral seta of tibia II–IV is strong and cylindrical.

**MATERIAL EXAMINED**. Holotype ♀ from the head of *Hipposideros diadema* (Chiroptera), in coll. Institut des Sciences naturelles de Belgique, New Guinea. Holotype in Institut des Sciences naturelles de Belgique, Bruxelles.

*Hipposiderobia ceylonica* (Radford, 1951)

*Myobia ceylonica* Radford, 1951.

*Hipposiderobia ceylonica*, Dusbabek, 1969.

This species has been described from *Hipposideros galeritus brachyotis* Dobson from Colombo, Ceylon, 17.v.1944.

We give here a drawing of that species from a female paratype (Figs 50 & 51) in the British Museum (Natural History).

This specimen is 291  $\mu\text{m}$  long and 175  $\mu\text{m}$  wide. The tarsus I bears one pair of very small claws, unlike in all the known species of the genus where these claws are lacking. Tarsi II–IV with two small and curved claws and a long pulvillus, as in the other species of the genus.

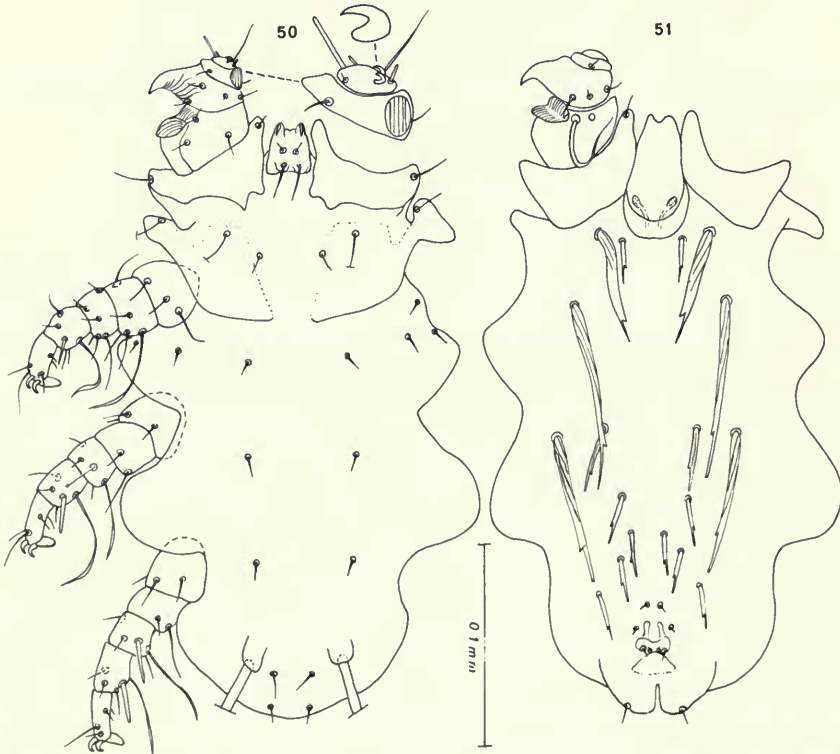
*Chaetotaxy*. *vi* toothed, relatively strong and 23  $\mu\text{m}$  long. The *d 1*, *d 2* are 30–32  $\mu\text{m}$  long and toothed, the *d 3*, *l 2*, *l 3* are toothed and 20–25  $\mu\text{m}$  long. The *d 4* and *d 5* are very small. Coxae 2–3–0–0. *Legs II–IV*. Trochanters 3–3–3; femora 5–2–2; genua 6–5–5; tibiae 6–5–5; tarsi 5–4–4.

Genus *EWINGANA* Radford, 1948  
Subgenus *EWINGANA* Radford, 1948

*Ewingana (Ewingana) australis* Fain, 1973

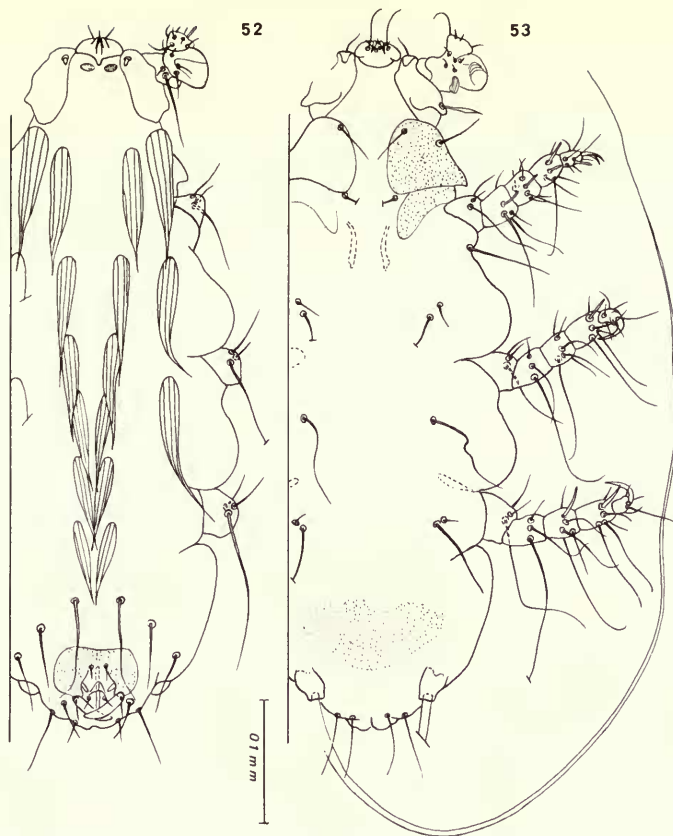
*E. (E.) australis* (see Fain, 1973b) is known only from the holotype female.

**FEMALE** (Figs 52 & 53). Holotype 525  $\mu\text{m}$  long, 219  $\mu\text{m}$  wide. *Dorsum*. The ano-vulvar lobes bear a strong hook. *Venter*. Coxae I sclerotized, with a strong lateral triangular projection. Opisthosoma with a punctate shield much wider than long. Legs I rather poorly developed; trochanters long and with several ventro-lateral projections, femur very narrow; tibio-tarsus separated from the genu by a constriction. The ventro-external hair of femur I is thin. Tarsus II with two slightly unequal claws. Tarsi III–IV with two very unequal claws. Gnathosoma much wider (35  $\mu\text{m}$ ) than long (23  $\mu\text{m}$ , dorsally).



Figs 50 & 51 *Hipposiderobia ceylonica* (Radford), paratype female. (50) ventral view; (51) dorsal view.





**Figs 52 & 53** *Ewingana (Ewingana) australis* Fain, holotype female. (52) dorsal view; (53) ventral view.

*Chaetotaxy of the body.* Dorsal hairs not toothed; *v i*, *v e*, *sc i*, *sc e*, *d 1-d 3*, *l 1*, *l 2* very wide and striated, *d 4*, *d 5*, *l 3*, *l 4* very thin and long. Coxae with 2-2-0-1 setae. The *ic 2-ic 4* are thin and long. *Legs.* Trochanters II-IV 3-3-3; femora 5-3-3; genua 7-6-6; tibiae 6-6-6; tarsi 7-6-6.

**MATERIAL EXAMINED.** Holotype ♀ from *Tadarida australis* (Chiroptera), BM no. 53.207-208, Central Highlands, New Guinea. Holotype (no. 1976.12.20.4) in BMNH.

Subgenus **DOREYANA** Dusbabek, 1968

*Ewingana (Doreyana) cheiromeles* Fain, 1972

*E. (D.) cheiromeles* (see Fain, 1972a, 1973c) is known only from the holotype female.

**FEMALE** (Figs 54 & 55). Holotype 630 µm long, 285 µm wide. *Dorsum.* Ano-vulvar lobes bearing two strong hooks (setae *g 7*). *Venter.* Coxae I with well-developed punctate shields separated in the midline. A punctate, wider than long, median shield is present in the anterior region of the opisthosoma, this shield bears a median sclerotized band slightly bifid posteriorly (? genital opening). Gnathosoma much longer dorsally than ventrally with anterolateral corners produced. *Legs I.* Trochanters long. Tarsi II-IV ending in two very unequal claws.

*Chaetotaxy of the body.* Most of the dorsal setae bear a double oblique striation, they are strong and rather short and bear a small preapical tooth. Coxal setae: 2-2-0-1. The *ic* are long. *Leg chaetotaxy.* Trochanters 3-3-3; femora 5-3-3; genua 7-6-5; tibiae 6-6-6; tarsi 7-6-6.

**MALE.** Unknown.

MATERIAL EXAMINED. Holotype ♀ from *Cheiromeles torquatus jacobsoni* (Chiroptera), BM no. 23.10.7.19, Lugu Simalur Is., N.W. Sumatra. Holotype (no. 1975.7.18.1) in BMNH.

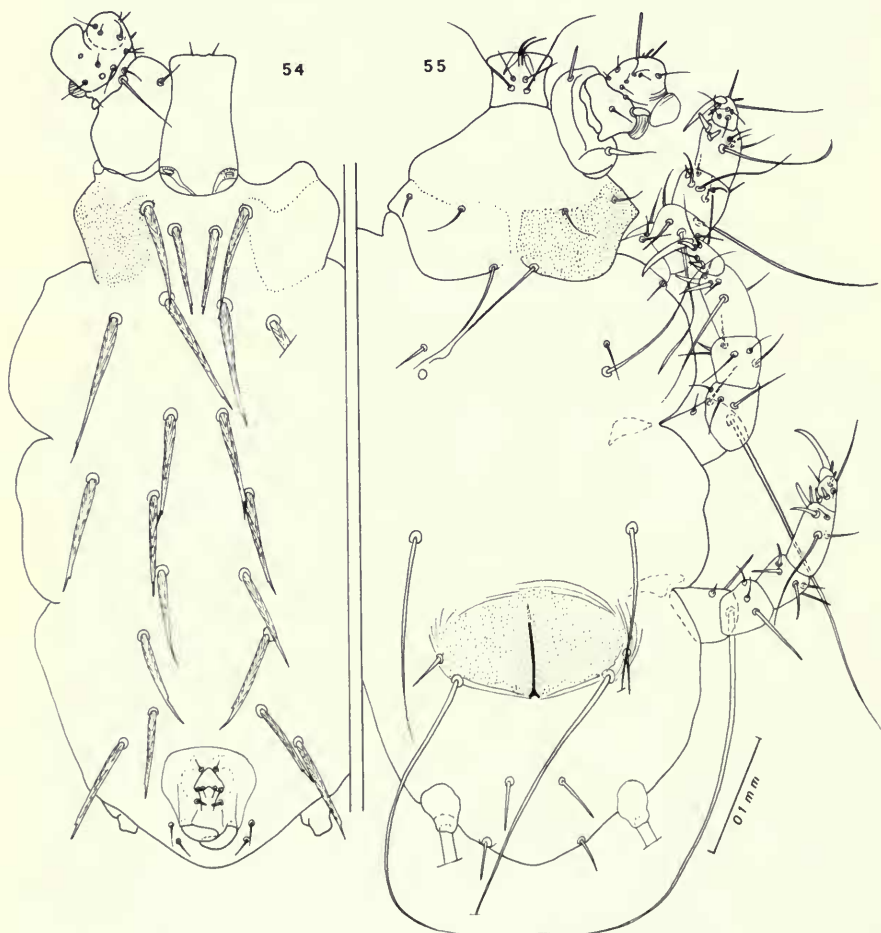
*Ewingana (Doreyana) simalurensis* Fain, 1973

*E. (D.) simalurensis* (see Fain, 1973b) is distinguished from *E. (D.) cheiromeles* in the female by the presence of a strong hook-like modified seta on the tibio-tarsus I, the greater length and the different shape of the gnathosoma, the much greater distance between the *vi*, the greater length of the *vi* and *ve*, the thinner shape of the *g 7*, etc.

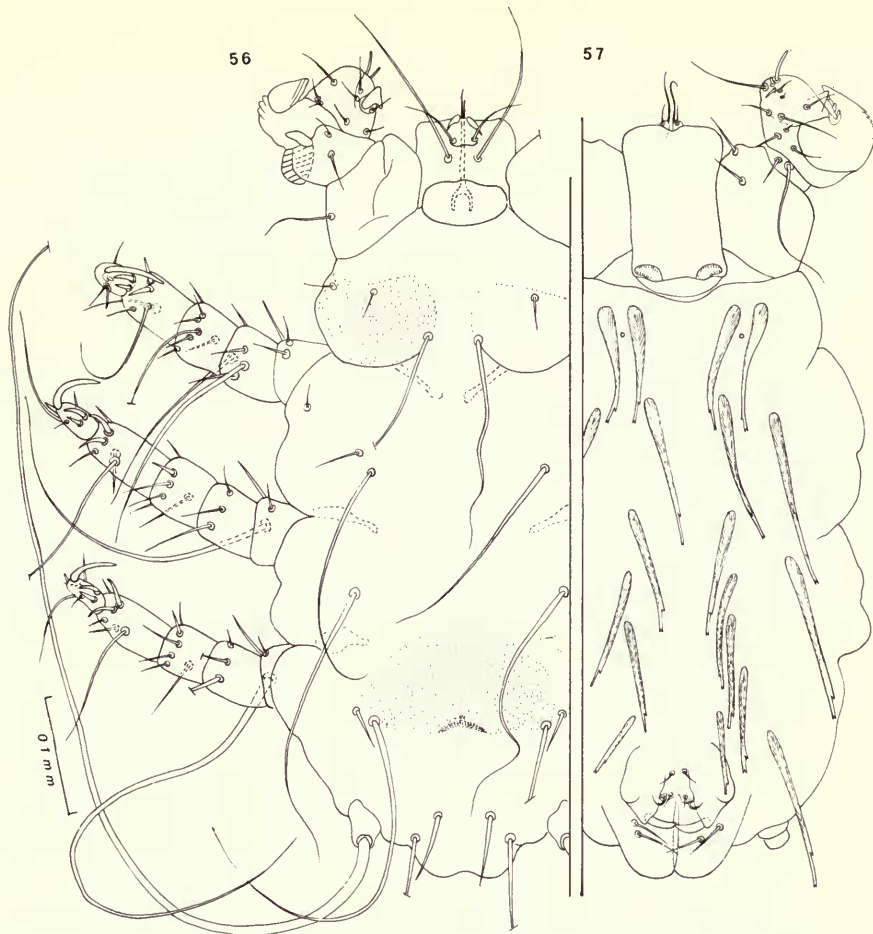
FEMALE (Figs 56 & 57). The holotype is 700 µm long and 320 µm wide. General aspect as in *E. (D.) cheiromeles*. The shields on coxae I are more spaced in the midline than in *cheiromeles*. The posteroventral shield does not bear a long median sclerotized band but along its posterior margin there is a transverse sclerotized band slightly concave in the midline. Gnathosoma only slightly expanded anteriorly and 126 µm long dorsally.

*Chaetotaxy*. The distance *v i-v i* is 66 µm (for 22 µm in *E. (D.) cheiromeles*). The *g 7* (= vulvar hooks) are thinner (7.5 µm thick) than in *cheiromeles* (16 µm thick).

MALE (Figs 58 & 59). The allotype is 510 µm long and 255 µm wide. Genital orifice situated at 30 µm behind the *sc e*. Behind the genital orifice there is a triangular area with an indistinct



Figs 54 & 55 *Ewingana (Doreyana) cheiromeles* Fain, holotype female. (54) dorsal view; (55) ventral view.



**Figs 56 & 57** *Ewingana (Doreyana) simalurensis* Fain, holotype female. (56) ventral view; (57) dorsal view.

striation and which bears 3 pairs of short spines, the most anterior pair being situated at the level of the genital aperture. Penis straight, 120  $\mu\text{m}$  long. The *vi* and *sci* are very small. Coxae I punctate as in the female. There is also an oval-shaped and median punctate area at the level of the coxae IV. Legs as in the female except that the hook-like hair is replaced by a strong-conical spine.

**MATERIAL EXAMINED.** Holotype ♀, allotype ♂, 2 paratype ♀♀ and 2 paratype nymphs from the eyelid of *Cheiromeles torquatus jacobsoni* (Chiroptera), BM no. 23.10.7.10–14, Lugu Simalur Is., N.W. Sumatra. Holotype (no. 1975.7.18.4), allotype (no. 1975.7.18.5) and paratype nymph (no. 1975.7.18.6) in BMNH.

*Ewingana (Doreyana) longipilis* Fain, 1973

*E. (D.) longipilis* (see Fain, 1973b) is known only from the female holotype. It is well characterized by the unusual length of some idiosomal and leg setae.

**FEMALE** (Figs 60 & 61). Idiosoma 630  $\mu\text{m}$  long and 225  $\mu\text{m}$  wide. *Dorsum*. The ano-vulvar lobes bear strong recurved setae. *Venter*. Coxa I with a punctate shield, the lateral surface only slightly produced. The anterior opisthosomal shield is wider than long. Legs I well developed; the trochanter without ventral processes; the external striated process of femur is short and wide.

Legs II–IV long. Tarsi II–IV with two very unequal claws. Gnathosoma longer dorsally ( $84\ \mu\text{m}$ ) than wide (maximum width  $54\ \mu\text{m}$ ).

*Chaetotaxy of the body.* Most of the dorsal setae are striated and toothed. The *vi* and *ve* are subequal ( $85\text{--}90\ \mu\text{m}$  long). Coxal setae: 2–2–0–1, the external coxal I are small conical spines. The *ic 3* and *ic 4* are  $250\ \mu\text{m}$  and  $450\ \mu\text{m}$  long respectively. *Leg chaetotaxy.* Number of setae as in *E. (E.) australis*, many of these setae are long or very long: the dorsal setae of trochanters III–IV are more than  $300\ \mu\text{m}$  long, the posterior setae of femura IV are at least  $400\ \mu\text{m}$  long.

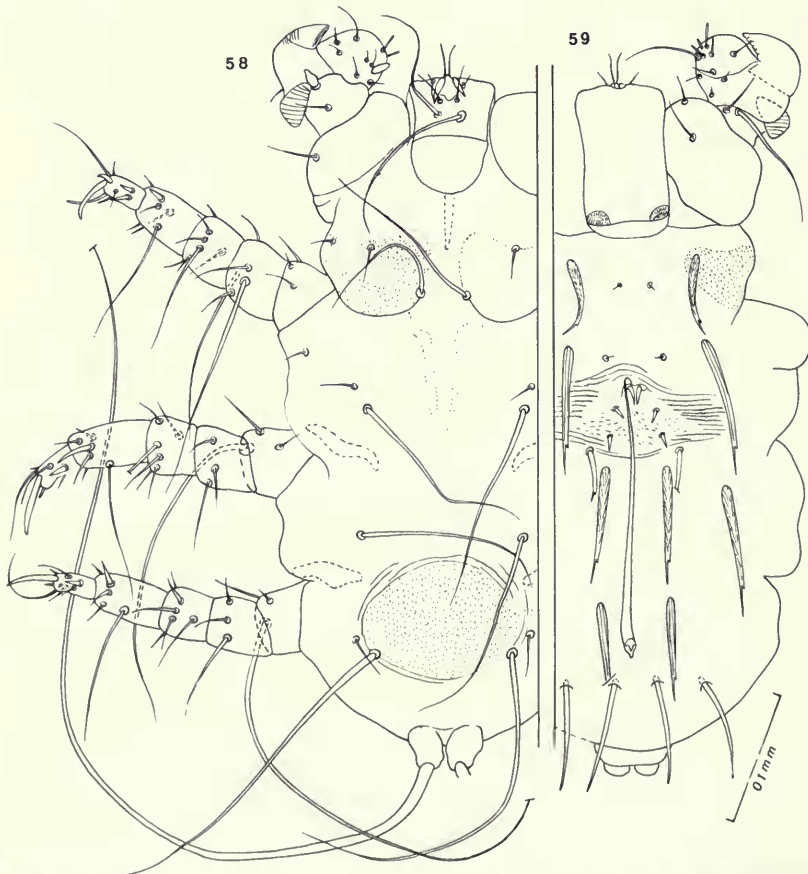
**MATERIAL EXAMINED.** Holotype ♀ from *Tadarida australis* (Chiroptera), BM no. 53.207–209, Central Highlands, New Guinea. Holotype (no. 1975.7.18.2) in BMNH.

Genus *UGANDOBI*A Dusbabek, 1968

*Ugandobia balionycteris* Fain, 1973

*U. balionycteris* (see Fain, 1973b) is known from the holotype female and paratypes nymphs. It is close to *U. (U.) ituriensis* Fain but is distinguished from that species mainly by the shape of the dorsal setae which are thicker and have a much longer inflated part.

**FEMALE** (Figs 62 & 63). The holotype is  $360\ \mu\text{m}$  long and  $146\ \mu\text{m}$  wide. *Dorsum.* Ano-vulvar lobes are poorly developed. *Venter.* Coxae I sclerotized and produced laterally. There is an internal sclerotized insemination apparatus in the opisthosoma. Legs I with a long trochanter distinctly produced anteriorly and with a triangular projection in its postero-lateral part. Legs II with two



**Figs 58 & 59** *Ewingana (Doreyana) simalurensis* Fain, allotype male. (58) ventral view; (59) dorsal view.



**Figs 60 & 61** *Ewingana (Doreyana) longipilis* Fain, holotype female. (60) ventral view; (61) dorsal view.

unequal claws, legs III–IV with one long claw. Gnathosoma narrow, 25  $\mu\text{m}$  long (ventrally), slightly widened posteriorly (maximum width 18  $\mu\text{m}$ ).

*Chaetotaxy of the body.* Most of the dorsal setae are striated and toothed. The *vi* are short and narrow. The *ve* are the widest (8.5  $\mu\text{m}$  wide) of the dorsal setae. The *d1*, *d2*, *l1*, *l2* setae are foliaceous and striated. The *d3–d5* and *l3*, *l4* are thinner, not striated but they present a tooth. Coxal setae: 2–2–0–1. Legs: trochanters 3–3–3; femora 5–1–1; genua 6–6–5; tibiae 6–6–6; tarsi 7–6–6.

**MATERIAL EXAMINED.** Holotype ♀ and paratype nymph from *Balionycteris maculata* (Chiroptera), BM no. 60.739–758, Kepong, Selangor, Malaya. Holotype (no. 1975.7.18.25) in BMNH.

#### *Ugandobia emballonuræ* Fain, 1972

*U. emballonuræ* (see Fain, 1972c) is known only from the holotype male.

**MALE** (Figs 64 & 65). The holotype is 254  $\mu\text{m}$  long and 105  $\mu\text{m}$  wide. Genital orifice situated at 15  $\mu\text{m}$  behind the *sc e*. Penis thin, curved apically, 135  $\mu\text{m}$  long. The genital plate bears 4 pairs of unequal setae. Coxa I with a strong lateral hooklike backwards-directed process. Trochanters I very wide (maximum width 32  $\mu\text{m}$ , measured close to their base), with a posterior margin strongly incised and with a very strong triangular lateral process directed obliquely and backwards. Legs II bearing two subequal claws, legs III–IV with one long claw.



*Chaetotaxy of the body.* The *ve*, *sc* and *ll* are 73  $\mu$ m, 62  $\mu$ m and 48  $\mu$ m long respectively. These setae, as well as the *d1* and the *d2*, are toothed. Coxae with 2-2-0-1 setae. The *ic 1-ic 3* are short (less than 12  $\mu$ m), the *ic 4* are thicker and longer (18  $\mu$ m long). *Legs II-IV*: trochanters 3-3-3; femora 5-1-1; genua and tibiae 6-6-6; tarsi 7-6-6.

**MATERIAL EXAMINED.** Holotype ♂ from *Emballonura nigrescens* (Chiroptera), in coll. Institut des Sciences naturelles de Belgique, Ile de Bougainville, New Guinea. Holotype in the Institut des Sciences naturelles de Belgique, Bruxelles.

Genus *EUDUSBABEKIA* Jameson, 1971

*Jamesonia* Dusbabek, 1967.

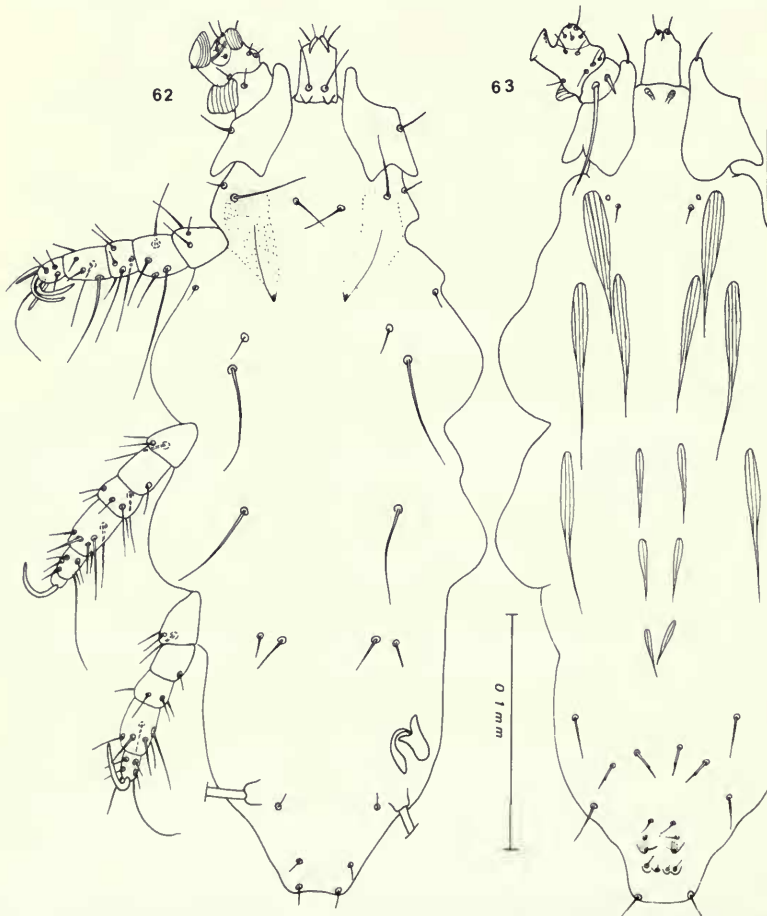
*Eudusbabekia* Jameson, 1971, nom. nov. pro. *Jamesonia* Bolivar, 1909, praecoc.

This genus at present comprises 22 species, all living on South American bats of the family Phyllostomatidae.

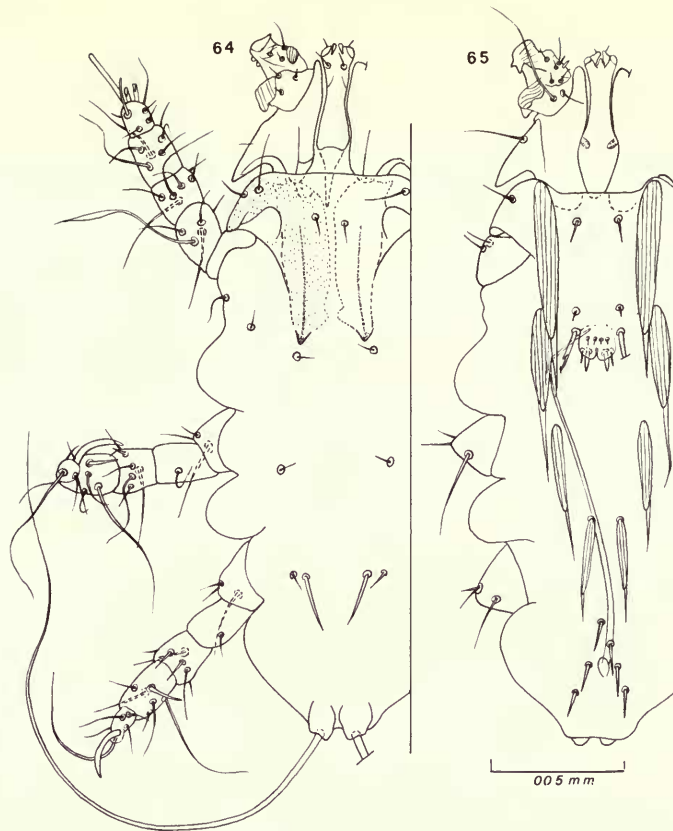
**Key to the species of *Eudusbabekia***

**Females**

- 1 Ventral surface with patch of 45 short and broad setae in addition to the ordinary setae *E. lepidoseta* Jameson, 1971
- Ventral surface bearing only the ordinary setae 2



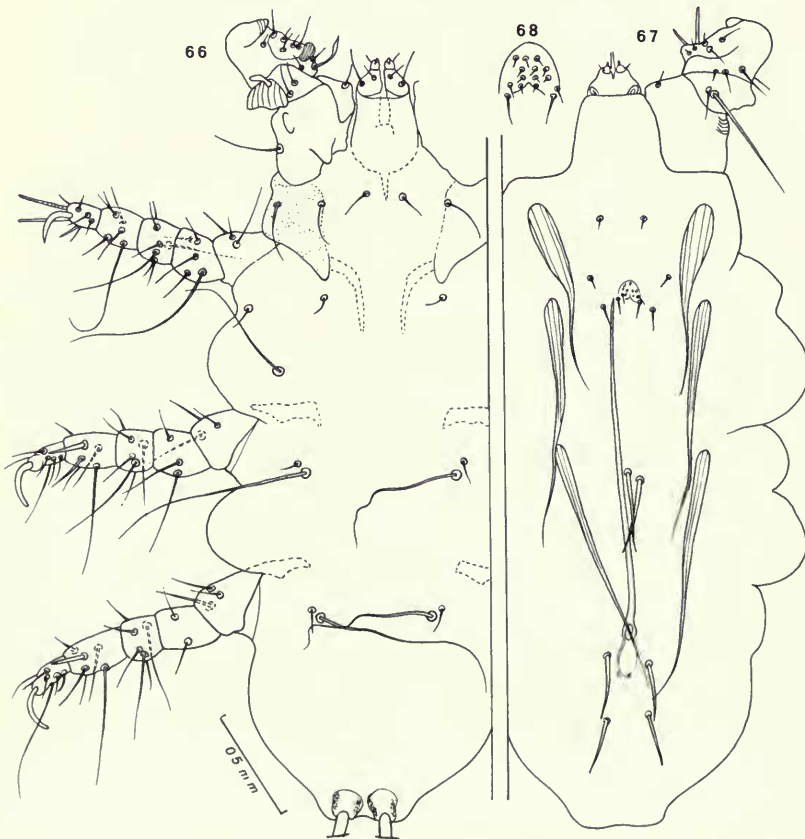
**Figs 62 & 63** *Ugandobia balionycteris* Fain, holotype female. (62) ventral view; (63) dorsal view.



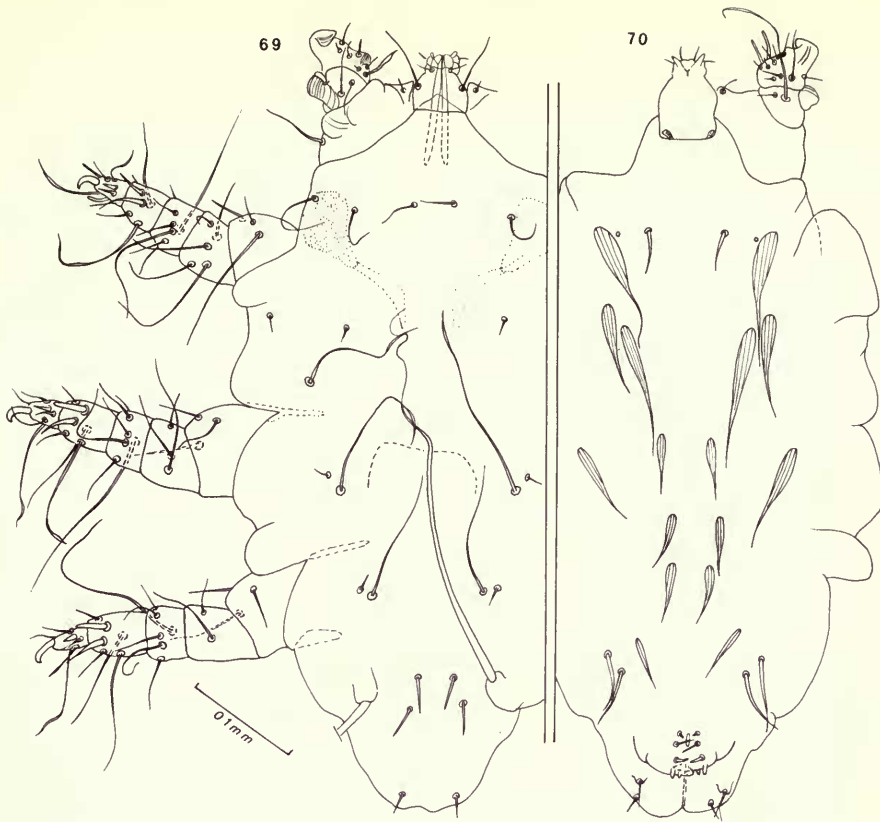
**Figs 64 & 65** *Ugandobia emballonuræ* Fain, holotype male. (64) ventral view; (65) dorsal view.

2	Setae <i>sc i</i> and <i>vi</i> very small, short and thin . . . . .	<i>E. cernyi</i> (Dusbabek, 1967)	3
-	Setae <i>sc i</i> and <i>vi</i> unequal, the <i>sc i</i> being foliate-striate . . . . .		3
3	Setae <i>ic 3</i> and <i>ic 4</i> thin and very short . . . . .	<i>E. danieli</i> (Dusbabek, 1967)	4
-	Setae <i>ic 3</i> and <i>ic 4</i> long . . . . .		4
4	Setae <i>sc e</i> and <i>li</i> distinctly expanded anteriorly and strongly and abruptly attenuated posteriorly . . . . .		5
-	Setae <i>sc e</i> and <i>li</i> more or less cylindro-conical, regularly attenuated posteriorly . . . . .		13
5	The <i>sc i</i> distinctly wider than <i>sc e</i> . . . . .		6
-	The <i>sc i</i> narrower or of the same width as the <i>sc e</i> . . . . .		7
6	Anterior extremity of trochanter I very wide, truncate, with a straight border. The <i>vi</i> distinctly separated from the <i>ve</i> . The <i>sc i</i> slightly shorter (75 $\mu$ m) than <i>sc e</i> and wider (9 $\mu$ m) than the latter (6 $\mu$ m). The <i>li 3</i> very thin . . . . .	<i>E. ecuadorensis</i> Fain, 1973	
-	Anterior extremity of trochanter I forming a long cone directed inwards. The <i>vi</i> close to the <i>ve</i> . The <i>sc e</i> 1.5 times longer than the <i>sc i</i> and distinctly narrower than the latter. The <i>li 3</i> thick and striated . . . . .	<i>E. rosickyi</i> (Dusbabek, 1967)	
7	The <i>sc i</i> longer than the <i>sc e</i> . . . . .		8
-	The <i>sc i</i> shorter than the <i>sc e</i> . . . . .		9
8	The <i>ve</i> , <i>sc i</i> , <i>sc e</i> , <i>li</i> narrower. Claws short and thick. Gnathosoma narrower, rounded laterally and 33 $\mu$ m wide . . . . .	<i>E. urodermae</i> Fain, 1972	
-	The <i>ve</i> , <i>sc i</i> , <i>sc e</i> , <i>li</i> wider. Claws longer and thinner. Gnathosoma angulated laterally and 43 $\mu$ m wide . . . . .	<i>E. viguerasi</i> (Dusbabek, 1967)	
		<i>E. macrophyllum</i> Dusbabek & Lukoschus, 1975	
9	Trochanters I ending anteriorly into a voluminous conical lobe rounded apically . . . . .		10
-	Trochanter I not ending into a conical lobe anteriorly . . . . .		12

- 10 The *sc e* approximately twice longer than the *sc i*. Anterior prolongation of trochanter I wide and very long. Gnathosoma rounded laterally. Ratio length-width of the body: 1.8  
*E. phyllodermae* Fain, 1973
- The *sc e* slightly longer and thicker than *sc i*. Anterior prolongation of trochanter I narrower and shorter . . . . . 11
- 11 Body short and wide (ratio length-width=1.6). The *sc i* and *sc e* subequal and situated on the same line. The *dl* situated in front of *ll*. The *l2* inflated medially. The *l3* are short  
*E. phyllostomi* Jameson, 1971
- Body elongated (ratio length-width=2.4). The *sc i* and *sc e* more unequal and the *sc i* are situated behind the *sc e*. The *dl* are situated behind the *ll*. The *l2* not inflated. The *l3* are long . . . . . *E. centurio* Fain, 1973
- 12 The *sc e* are twice as long as the *sc i*. The *vi* are more spaced . . . . . *E. samsinaki* (Dusbabek, 1967)
- The *sc e* are 1.5 times as long as the *sc i*. The *vi* are more close to each other  
*E. arganoi* Vomero, 1972
- 13 The *vi* are thick and striated. Postero-lateral angle of coxa I strongly produced. Setae *sc i* distinctly thicker than *sc e*. Body length 306  $\mu\text{m}$  . . . . . *E. saguei* (Dusbabek, 1967)
- The *vi* are thin. Postero-lateral angle of coxa I not produced. Setae *sc i* very slightly thicker than *sc e*. Body length 330–360  $\mu\text{m}$  . . . . . 14
- 14 Gnathosoma abruptly widened in its posterior half. Trochanter I long, distinctly produced anteriorly . . . . . 15
- Gnathosoma not abruptly widened in its posterior half. Trochanter I short, very slightly produced anteriorly . . . . . *E. jimenezi* (Dusbabek, 1967)



Figs 66–68 *Eudusbabekia urodermae* Fain, holotype male. (66) ventral view; (67) dorsal view; (68) genital setae.



Figs 69 & 70 *Eudusbabekia urodermae* Fain, allotype female. (69) ventral view; (70) dorsal view.

- 15 The *sc e* are twice as long as the *sc i*. The *d 1*, *d 2*, *d 3* and *l 2* with a bulbous thickening in their median part. The *v i* are situated close to the *v e*. Trochanter I with a strong, triangular anterior projection . . . . . *E. chropterus* Fain, 1973
- The *sc e* are distinctly less than twice as long as the *sc i* . . . . . 16
- 16 The *v i* are closer to the *v e* than to the midline . . . . . *E. brachyotis* Dusbabek & Lukoschus, 1975
- The *v i* are closer to the midline than to the *v e* . . . . . 17
- 17 Setae *d 1*, *d 2*, *d 3* and *l 2* with a bulbous thickening in their median part
- . . . . . *E. hastata* Dusbabek & Lukoschus, 1975
- Setae *d 1*, *d 2*, *d 3* and *l 2* without distinct bulbous thickenings in their median part . . . . . 18
- 18 Setae *v e* moderately inflated. Dorso-anterior seta of trochanter I not toothed *E. mimon* Fain, 1973
- . . . . . *E. trachopis* Dusbabek & Lukoschus, 1975
- . . . . . *E. anthorhinae* Dusbabek & Lukoschus, 1975
- Setae *v e* very wide. Dorso-anterior seta of trochanter I toothed
- . . . . . *E. micronycteridis* Dusbabek & Lukoschus, 1975

*Eudusbabekia urodermae* Fain, 1972

MALE (Figs 66–68). The holotype of *E. urodermae* (see Fain, 1972a) is 315  $\mu\text{m}$  long and 150  $\mu\text{m}$  wide. *Dorsum*. Genital orifice situated on the same transverse line as the *sc e*. The genital plate bears 12 very small hairs, it is followed by two pairs of short and thin setae, probably the *d 1* and *d 2* displaced anteriorly. *Venter*. Coxae I distinctly sclerotized. *Legs I*. Trochanter I slightly produced anteriorly, bearing a conical prolongation on ventral surface. The clasping surfaces of femur and genu I are poorly developed; the tibio-tarsus bears ventrally a striated scale. Tarsi

II–IV with one claw normally developed. Gnathosoma short, distinctly expanded in its posterior half.

*Chaetotaxy of the body.* The *ve* are much wider than the *sc e* and the *ll*, the latter being subequal to each other. The *vi* and *sc i* are very small. Coxae I–IV with 2–2–1–1 setae respectively. The *ic 1* and *ic 2* are short and thin, the *ic 3* and *ic 4* are long and thin. Legs II–IV (number of setae): trochanters 3–3–3; femora 5–3–2; genua 7–6–6; tibiae 6–6–6; tarsi 7–6–6.

**FEMALE** (Figs 69 & 70). The allotype is 480  $\mu\text{m}$  long and 250  $\mu\text{m}$  wide. *Dorsum.* Vulva with 2 membranous lobes. *Venter.* Coxae I as in the male. Gnathosoma longer than in the male. Legs thicker than in the male with shorter and thicker claws.

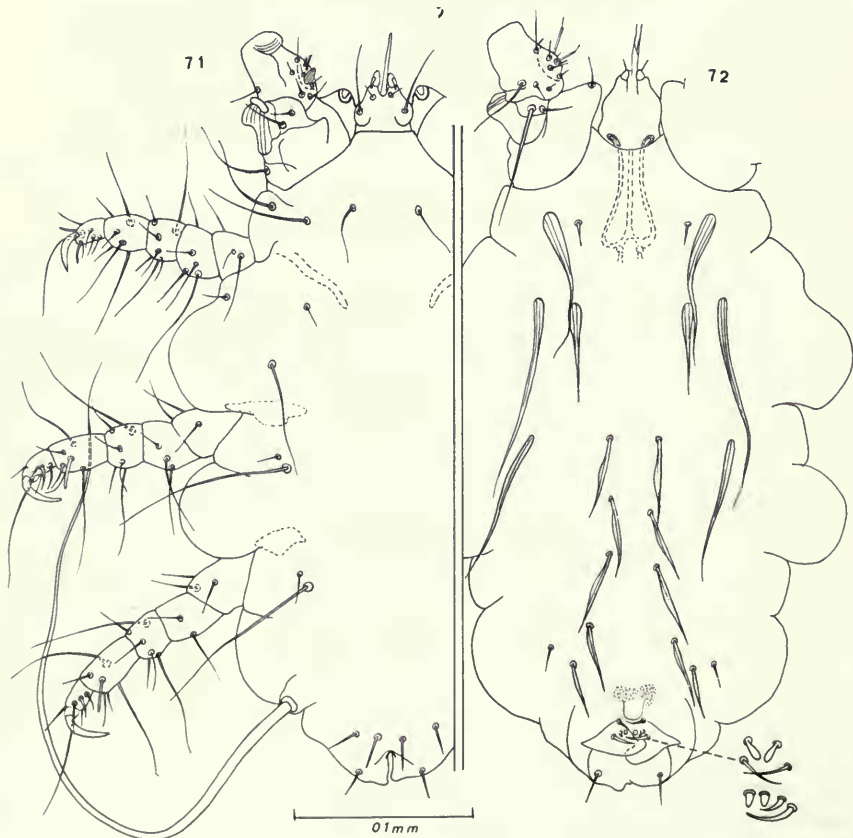
*Chaetotaxy of body.* *vi* small; *sc i* as wide as the *sc e* but slightly longer than the latter. The *l 4* is lacking. Ventral setae as in the male but the *g 1*, *g 2* and *g 3* are present in the posterior part of the body. Leg chaetotaxy as in the male but some setae (ventral setae of tibiae II–IV) are stronger.

**MATERIAL EXAMINED.** Holotype  $\sigma$ , allotype  $\text{f}$ , 2 paratype  $\text{f}$  and 4 paratype nymphs from *Uroderma magnirostrum* (Chiroptera), Mocambo Forest, Belém, Brazil, collected 20.iii.1968 (Dr T. Aitken). Types in U.S. National Museum.

### *Eudusbabekia chropterus* Fain, 1973

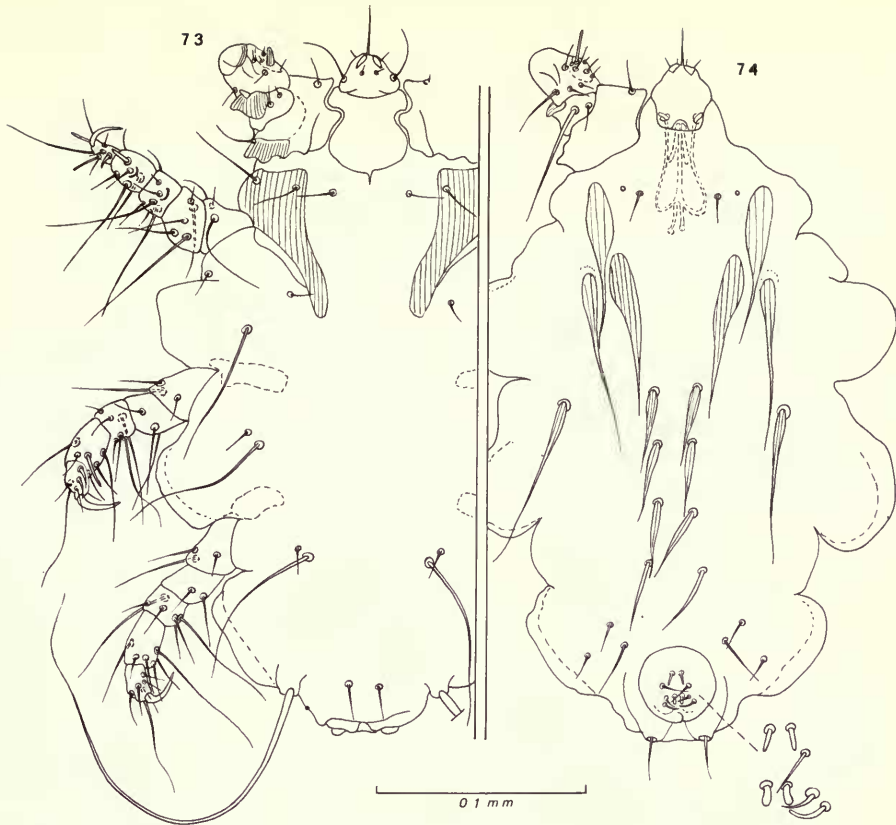
*E. chropterus* (see Fain, 1973b) represented only by the holotype female.

**FEMALE** (Figs 71 & 72). The holotype is 360  $\mu\text{m}$  long and 225  $\mu\text{m}$  wide. *Dorsum.* Ano-vulvar lobes wide, rounded apically. *Venter.* Coxae I with a ventro-lateral projection directed pos-



**Figs 71 & 72** *Eudusbabekia chropterus* Fain, holotype female. (71) ventral view; (72) dorsal view.





Figs 73 & 74 *Eudusbabekia ecuadorensis* Fain, holotype female. (73) ventral view; (74) dorsal view.

teriorly. Gnathosoma abruptly expanded in its posterior part, with two small ventral lobes. Legs; trochanters I long forming anteriorly a broad cone attenuated apically. Legs II–IV bearing a well-developed claw.

*Chaetotaxy.* *vi* short and narrow and situated close to the *ve*. The *sc e* much longer (120  $\mu\text{m}$ ) than the *sc i* (51  $\mu\text{m}$ ). The *d 1*, *d 2*, *d 3*, *l 3* are 40–45  $\mu\text{m}$  long and they present a bulb in their median part. The *l 4* is lacking. The internal coxal II is longer (45  $\mu\text{m}$ ) than the *ic 2* (12  $\mu\text{m}$ ). The *ic 3* and *ic 4* are 90  $\mu\text{m}$  long. Number of setae on legs II–IV as in *E. urodermae*.

MALE. Unknown.

MATERIAL EXAMINED. Holotype ♀ from *Chrotopterus auritus guianae* (Chiroptera), BM no. 65.629–630, near Bartica, Guyana. Holotype (no. 1975.7.18.11) in BMNH.

#### *Eudusbabekia ecuadorensis* Fain, 1973

*E. ecuadorensis* (see Fain, 1973b) is represented only by the holotype female.

FEMALE (holotype) (Figs 73 & 74). Length 309  $\mu\text{m}$ , width 192  $\mu\text{m}$ . *Dorsum.* Vulvar lobes long, conical with rounded extremities. *Venter.* Coxae I well sclerotized and with longitudinal striations. Legs II–IV rather short, ending in a medium-sized claw. Leg I: trochanter with a serrate posteroventral margin, its anterior extremity very broad, with a straight border; its internal surface is deeply incised. In ventral view the gnathosoma is wider than long and enlarged posteriorly. In dorsal view the gnathosoma is longer than wide.

*Chaetotaxy*. The *ve*, *sci*, *sce* and *l1* are subequal in length (75–80  $\mu\text{m}$ ). The *sci* is wider (10  $\mu\text{m}$ ) than the *sce* (6  $\mu\text{m}$ ). The *d1*, *d2*, *d3* and *l2* are 40  $\mu\text{m}$  long. *Ventrally*. *ic3* and *ic4* are 65  $\mu\text{m}$  and 90  $\mu\text{m}$  long respectively and very thin.

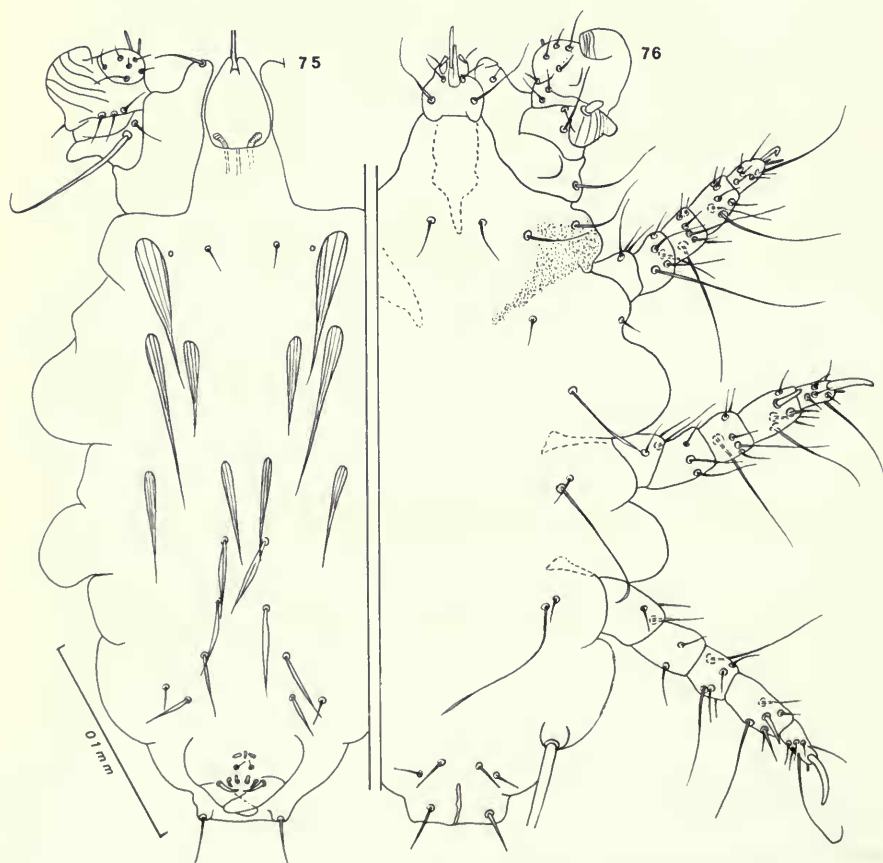
MALE. Unknown.

MATERIAL EXAMINED. Holotype ♀ from *Mormoops megaphylla* (Chiroptera), BM no. 98.9.5.10, Paramba, Ecuador. Holotype (no. 1975.7.18.12) in BMNH.

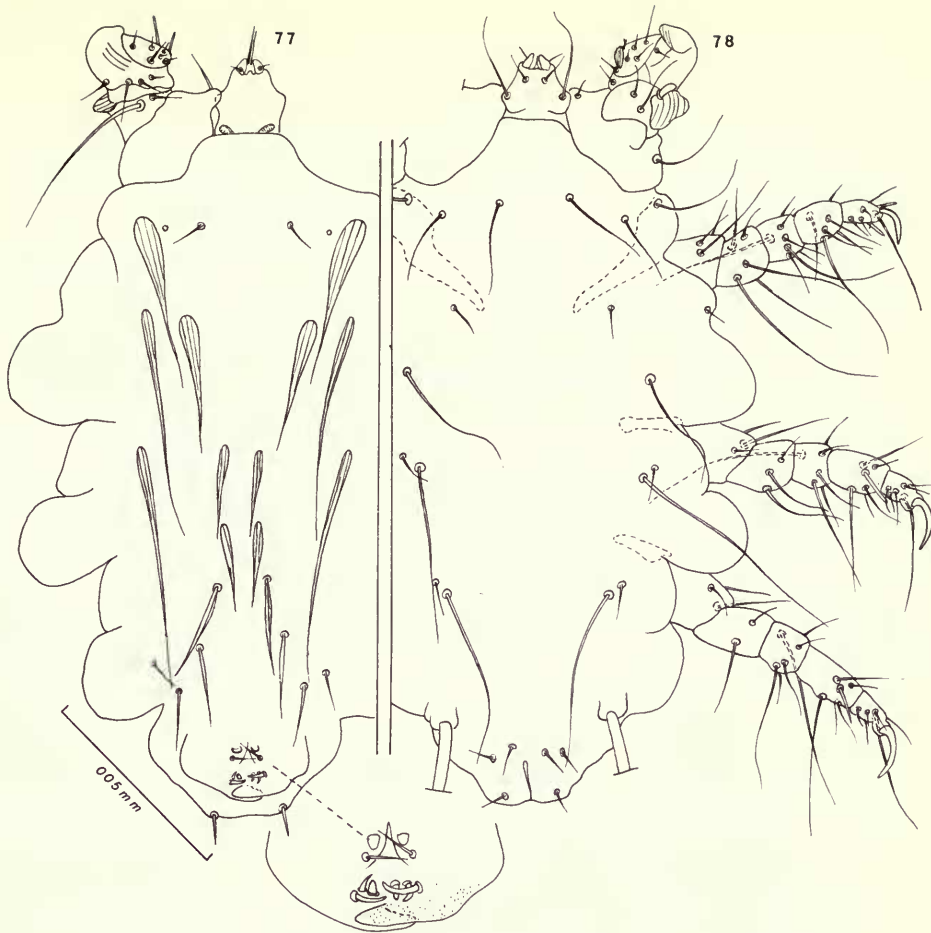
*Eudusbabekia phyllodermae* Fain, 1973

*E. phyllodermae* (see Fain, 1973b) is known only after the female.

FEMALE (holotype) (Figs 75 & 76). Length 375  $\mu\text{m}$ , width 190  $\mu\text{m}$ . *Dorsum*. Ano-vulvar lobes long and rather narrow. *Venter*. The sclerotization of coxae I is triangular shaped with a narrow postero-internal prolongation. Posterior margin of the body straight. Gnathosoma widened posteriorly, shorter ventrally than dorsally with two posterior ventral lobes. Legs: trochanters I with a long rounded antero-internal prolongation. Legs II–IV with a terminal claw, the claws of legs III–IV much longer and stronger than that of leg II. Tibiae III–IV with two rather strong ventral spines.



Figs 75 & 76 *Eudusbabekia phyllodermae* Fain, holotype female. (75) dorsal view; (76) ventral view.



Figs 77 & 78 *Eudusbabekia mimon* Fain, holotype female. (77) dorsal view; (78) ventral view.

*Chaetotaxy of the body.* *vi* very thin and short; *ve* wide and striated and strongly attenuated posteriorly. The *sci* distinctly shorter than *sce*. The *d*2 and *l*2 distinctly inflated in their median part. The coxal II internal, the *ic*3 and *ic*4 are long and foliaceous apically. Number of setae on the legs II–IV as in *E. urodermae*.

**MATERIAL EXAMINED.** Holotype ♀ and paratype ♀ from the dorsum of *Phylloderma stenops* (Chiroptera), BM no. 65.626–628, near Bartica, Guyana. Holotype (no. 1975.7.18.14) in BMNH.

***Eudusbabekia mimon* Fain, 1973**

**FEMALE** (Figs 77 & 78). The holotype of *E. mimon* (see Fain, 1973b) is 330  $\mu\text{m}$  long and 204  $\mu\text{m}$  wide. *Dorsum.* Vulvar lobes shorter and more conical than in *E. phyllodermae*. *Venter.* The sclerotized area of the coxa I is long and narrow. Gnathosoma slightly longer dorsally than ventrally, distinctly enlarged in its posterior half. Legs: trochanters I long but only very slightly produced anteriorly. Tarsi II–IV with one well-developed claw, the claws II being only slightly smaller than claws III and IV. Tibiae III–IV with a ventral narrow cylindrical hair.

*Chaetotaxy of the body.* *vi* very thin and short; *ve* are the widest setae of the body; *sci* slightly thicker and much shorter than *sc e*; the *l 4* are missing. The *ic 3* and *ic 4* are long, very thin and foliaceous apically.

*Chaetotaxy of legs* (number of setae). As in *E. urodermae*.

**MALE** (Figs 79–81). Allotype 252  $\mu\text{m}$  long and 150  $\mu\text{m}$  long. The *vi* and *sci* are very thin and short (3–5  $\mu\text{m}$ ). Genital orifice situated at 21  $\mu\text{m}$  behind the *sc e*. In front of the genital orifice there is a small sclerotized plate bearing 6–7 pairs of very small spinules and postero-laterally 2 pairs of thin setae 10–12  $\mu\text{m}$  long, one antero-external and one postero-internal.

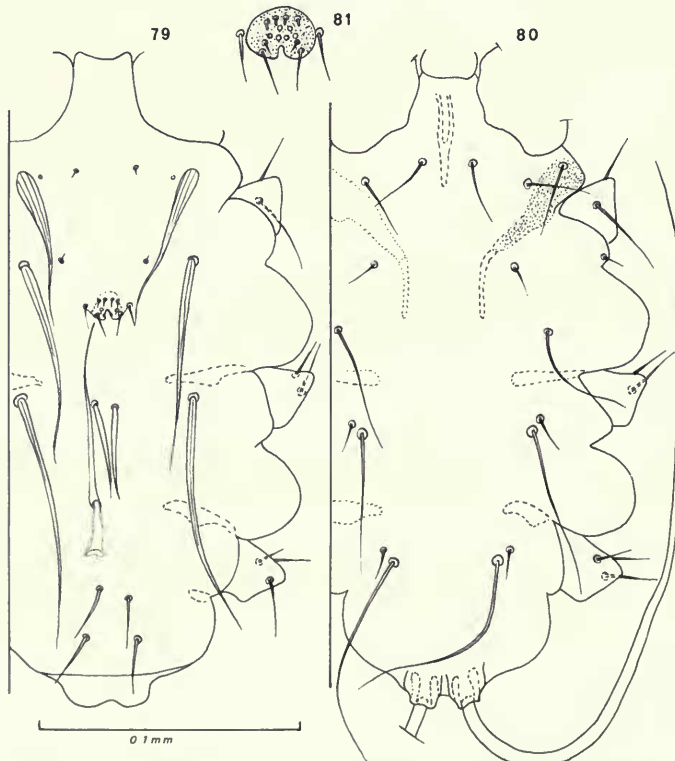
**MATERIAL EXAMINED.** Holotype ♀, allotype ♂, paratype ♂ and 2 paratype nymphs from *Mimon bennetti* (Chiroptera), BM no. 65.618, near Bartica, Guyana. Holotype (no. 1975.7.18.13) in BMNH.

### *Eudusbabekia centurio* Fain, 1973

**FEMALE** (Figs 82–86). The holotype of *E. centurio* (see Fain, 1973b) is 450  $\mu\text{m}$  long and 187  $\mu\text{m}$  wide. *Dorsum.* Ano-vulvar lobes strongly developed. *Venter.* Coxa I partly sclerotized, with a longitudinal internal crest. Gnathosoma pentagonal, wider (36  $\mu\text{m}$ ) than long (33  $\mu\text{m}$  long dorsally and 15  $\mu\text{m}$  ventrally) and bearing two postero-lateral ventral lobes. Legs I. Trochanters I very long, strongly produced anteriorly and presenting ventrally two short triangular or conical processes. The complex tarsus–tibia–genu I is unusually long. Legs II–IV narrow, ending in a well-developed claw.

*Chaetotaxy of the body.* The dorsal striated setae are particularly wide and long. The *sci* are thinner than the *sc e*. The *l 4* are missing. The *ic 1* are thin and short (15  $\mu\text{m}$ ).

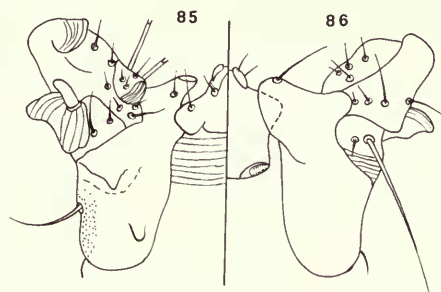
*Chaetotaxy of the legs.* There is a strong spine on the ventral surface of tibiae II and III.



**Figs 79–81** *Eudusbabekia mimon* Fain, allotype male. (79) dorsal view; (80) ventral view; (81) genital setae



**Figs 82–84** *Eudusbabekia centurio* Fain, holotype female. (82) ventral view; (83) dorsal view; (84) genital setae.

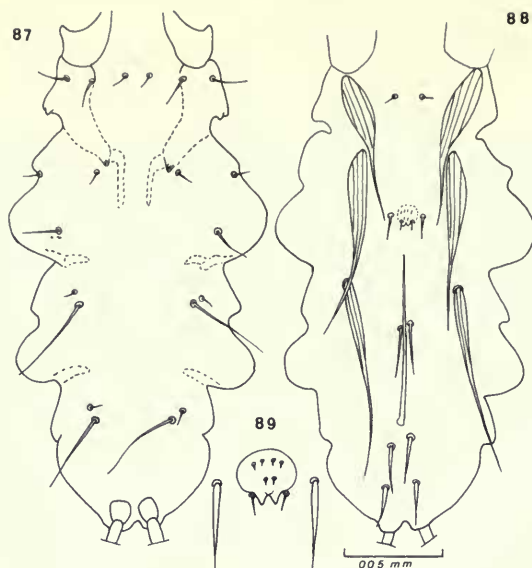


**Figs 85 & 86** *Eudusbabekia centurio* Fain, holotype female, legs I and gnathosoma. (85) ventral view; (86) dorsal view.

**MALE** (Figs 87–89). Allotype 279  $\mu\text{m}$  long and 129  $\mu\text{m}$  wide. Genital aperture situated at 36  $\mu\text{m}$  behind the anterior extremity of the *sc e*. The sclerotized plate in front of this orifice bears 3 or 4 pairs of very short and poorly distinct spinelets and one pair of small setae, 5  $\mu\text{m}$  long. At each side of the orifice is a cylindro-conical hair 10–12  $\mu\text{m}$  long. Penis very narrow, straight and 65–70  $\mu\text{m}$  long.

**MATERIAL EXAMINED.** Holotype ♀, paratype ♀, allotype ♂ and 5 paratype nymphs from the dorsum of *Centurio senex* (Chiroptera), BM no. 1938.12.23.15, Tobago. Holotype (no. 1975.7.18.7), allotype (no. 1975.7.18.8) and two paratype nymphs (nos 1975.7.18.9–10) in BMNH.





Figs 87–89 *Eudusbabekia centurio* Fain, allotype male. (87) ventral view; (88) dorsal view; (89) genital setae.

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